INDEX OF ARTICLES
DECUS PROCEEDINGS
1962-1972

1962 DECUS PROCEEDINGS

A Peripheral Processor for Large Computers by D. T. Monk*

Translation Problems of a Peripheral Computer in a Multi-Lingual House by R. P. Abbott and L. E. Mish

A Systems Tape for the PDP-1 by F. Bonnell

TED: A Tape Editor by C. R. Brown and D. W. Connolly

Scopetrace by J. R. Hayes

Matrix Package for the DX-1 Experimental Dynamic Processor at AFCRL by C. J. Caso, J. M. Sexton, and J. N. Seltzer

DECAL-BBN by R. J. McQuillin

Minimax Detection Station Placement by R. D. Smallwood

Use of the PDP-1 in Optical Design by M. V. Morello, E. J. Radkowski, M. P. Rimmer, and R. R. Shannon

Computer Aided Analysis of Multivariable Systems Using Color Scope by C. M. Walter

A World Oceanographic Data Display System by E. Fredkin

The Vortex Ocean Model by E. Fredkin

Spacewar! Real-Time Capability of the PDP-1 by J. M. Graetz

On-Line Processor-Oriented Investigation of a Class of Dynamic Attribute Extraction and Classification Processes by C. M. Walter

Film Reading Using a Computer by A. M. Cappelletti

A Functional Description of the Itek Display System by E. W. Pughe, Jr.

A Time-Sharing System for the PDP-1 Computer by J. E. Yates

Process Control Applications of PDP-4 by C. G. Bell*

*Abstract Only

1962 DECUS PROCEEDINGS (continued)

Panel Discussion: DECAL, MACRO, and the PDP-1

1963 DECUS PROCEEDINGS

Address by Dr. J.C.R. Licklider

Just Nine Packages Between You and Time Sharing by S. Boilen and L. Clapp*

Stanford Time-Sharing System by J. McCarthy

Report on a Large-Scale Time-Sharing System by J. I. Schwartz

M.I.T.'s Project MAC: Current Status by R. Mills

Recent Improvements in DDT by D. J. Edwards and M. Minsky

An Invisible Debugging Program for a PDP-1 Time-Sharing System by M. Wolfberg

Modification of a Program Symbolic at Compile Time by J. B. Goodenough

A Versatile Programming System for Large PDP Installations by T. Strollo

Flint 36 A3D by J. Baker and D. Isenberg

Midas Assembly Program and the PDP-1 by R. Saunders*

The PDP-1 as a Versatile Research Tool by W. Fahle and D. Brand

Time Sharing in the Processing of Nuclear Research Data by A. J. Ferguson, B. Miles, and J. Leng

PDP-1 Scanning and Measuring of Nuclear Particle Track Photographs by M. Deutsch

PIP: A Photo-Interpretive Program for the Analysis of Spark-Chamber Data by H. Rudloe

The Digigraphic Display Program for the DX-1 Computer by J. T. Gilmore, Jr.

Signal Representation and Measurement Data Manipulation in N-Space Using an On-Line PDP System by C. M. Walter

Steps Toward Computer Simulation of Small Group Behavior by T. Roby and R. Nickerson

1963 DECUS PROCEEDINGS (continued)

A Hybrid PDP-1 for Speech Research by D. L. Hogan and R. J. Scott

Computer Aids to Number Theory by M. Pivar

Requirements of a Time-Shared Computer System for Publishing Applications by L. Buckland*

The PDP-1 as a Teaching Aid for Problem Solving by W. Feurzeig

Hardware Provisions for Efficient Time-Sharing Operation of a PDP-1 by N. Kerllenevich

Microtape: Its Features and Applications by L. Hantman

On-Line Input of Graphical Data by W. Fletcher

The Hybrid Computation Facility at United Aircraft Corporation Research Laboratories by R. Belluardo, R. Gocht, and G. Paquette

Uses for the PDP-1 at Livermore by N. Hardy*

The PDP-1 as a Display Maintaining Console by A. Kotok*

1964 DECUS PROCEEDINGS

Computer Aids to Vocal Cord Studies at AFCRL by Lt. John L. Ramsey

A Language Teaching System with Real-Time Speech Processing, Error Descrimination, and Error Presentation by Roger Buiten and Harlan Lane

A PDP-5 Interpretive-Simulator for the PDP-4 (SLOFIN) by Herbert M. Norris

Computer Aids to Literature Searches by Mario C. Grignetti

System for the Recording, Processing, and Exchange of Library Card Data by Lawrence Buckland

The PDP-1 as an On-Line Correlator by William A. Fahle

An Information Retrieval Program to Aid in Proving Theorems by William H. Henneman*

A Computer Time-Shared Display by Daniel M. Forsyth

Potential Applications of a Time-Shared Computer in Secondary School Education by Lewis Clapp and Jesse O. Richardson*

1964 DECUS PROCEEDINGS (continued)

A Medical Data Monitor for the PDP-1 by D. H. Brand, R. M. Colomb, and J. W. Fickes

Problems Involved in Real-Time Medical and Biological Computation by William A. Fahle*

An Interpretive Communication System in the Hospital Environment by J. J. Baruch, J. H. Hughes, S. Boilen, and R. A. Bolt

Intrinsic Analysis vs. Fourier Analysis in the Representation of Signal Data Structures by Charlton M. Walter

The Use of a Digital Computer (PDP-4) for On-Line Real-Time Biological Systems Analysis by Stephen Lorch and Richard Martin*

PIP: A Man-Machine System for Diagnosis and Decision Making by Ward Edwards and Lawrence Phillips*

Use of the PDP-1 in the Analysis Phase of a Large-Scale Oceanographic Data Acquisition System by Richard J. McQuillin

Look-up Techniques for Natual Language Processing on the PDP-1 by Charles R. Burgess and Charles E. Hurlburt

A FORTRAN Compiler for the PDP-1 by J. R. Alexander, V. L. Foxworthy, and R. M. Colomb

Automatic Justification and Hyphenation on the PDP-1 by Charles E. Hurlburt

The PDP-5 Reactor Monitor Computer at CRNL by Kenneth Morin

PDP-5 Systems with Nuclear Physics Experiments by Sypko Andreae

FORTRAN for the PDP-5 by Lawrence J. Portner

Computer Generated Automatic Wiring Machine Data for the PDP-4/7 by Charles W. Stein*

DEC Scheduling System Utilizes PDP-4 FORTRAN by Robert Vernon

PDP-4 SYMPOSIUM PROCEEDINGS (January, 1964)

The Keydata On-Line Processor (KOP-2) by C. W. Adams and J. T. Gilmore

Application of PDP-4 to Medical Research by Steven Lorch

PDP-4 SYMPOSIUM PROCEEDINGS (January, 1964) (continued)

Application of PDP-4 to a Direct Digitally Controlled Batching Process by Saul Dinman and Allen Rousseau

PDP-4 as a Control Element for the Automatic Module Test System by Russell Winslow*

The PDP-4 FORTRAN Algebraic Statement Compiler by Steve Piner

DECSYS, An Integrated Programming System for the PDP-4 by David Fellows

The PDP-4 FORTRAN List Processor (FLIP) by Steve Piner

The PDP-4 in an Industrial Process Control System by David McAvinn

PDP-5 SYMPOSIUM PROCEEDINGS (September, 1964)

PDP-5 Systems with Nuclear Physics Experiments by Sypko Andreae

Stanford Computer for Analysis of the Nuclear Structure by Philip Bevington (PDP-7)

The Berkeley Time-Sharing System by Steven Carr

New Applications for the PDP-5 in Nuclear Physics by Ken Larsen

Data Processing Installation at the 88" Cyclotron by Lloyd Robinson

PDP-5 Software Activities at LRL by Anthony Schaeffer

Spiral Reader Control and Data Acquisition with PDP-4 by Jon Stedman

A PDP-5 Pulse-Height Analyzer with Special Equipment by Robert Swenson

SPRING 1965 DECUS PROCEEDINGS

DECUS Address by Harlan E. Anderson

Computer-Aided Design by Steven A. Coons*

DECADE - Computer-Aided Design on Low Cost Hardware by Charles W. Stein

Use of a PDP-5 for the Collection of Mossbauer Experimental Data by Ronald H. Goodman and John E. Richardson

A High-Speed Man-Computer Communication System by Earl H. Brazeal, Jr., and Taylor L. Booth

SPRING 1965 DECUS PROCEEDINGS (continued)

PDP-5 Projects at Lawrence Radiation Laboratory by Sypko Andreae

Computer Systems for Recording, Retrieval, and Publication of Information by Richard J. McQuillin and Joseph T. Lundy

The Savage System: A Monitor System by Bernard I. Savage

PDP-5/PDP-1 On-Line Data Collection and Editing System by Pablo Larrea

A Version of LISP for the PDP-6 by William A. Martin

A Report on the Implementation of the Keydata System by Charles W. Adams

A Chalk River PDP-5 Pulse-Height Analyzer by Dallas C. Santry

A Description of the PEPR System by David Friesen

DEXTER - The DX-1 Experimenters Tape Executive Routine by Jerome Cohn

The Use of a Small Computer with Real-Time Techniques for Oceanographic Data Acquisition, Immediate Analysis, and Presentation by Robert M. O'Hagan

The Use of a Digital Computer for Automatic Setup, Checkout, and Maintenance of a Hybrid Computer System by Stephen F. Lundstrom

Sound-Off Session

FALL 1965 DECUS PROCEEDINGS

The PDP-1 Program Grasp by Ronald Gocht and Stuart Sharpe

Direct Digital Control to High Energy Particle Accelerators by Donald R. Machen

Current Trends in Hybrid Computer Oriented Software by Stephen F. Lundstrom

Spiral Reader Control and Data Acquisition with the PDP-4 by Jon D. Stedman

Paramet, A Program for the Visual Investigation of Parametric Equations by Kenneth Bertran

On-Line Reduction of Nuclear Physics Data with the PDP-7 by Philip R. Bevington

Application of the LINC Computer to Operant Conditioning by C. Alan Boneau

A.L.I.C.S. - Assembly Language by Joseph A. Rodnite

Some New Developments in the DECAL Compiler by Richard J. McQuillin

FALL 1965 DECUS PROCEEDINGS (continued)

Message Switching System Using the PDP-5 by Sypko Andreae

The Learning Research and Development Center's Computer Assisted Laboratory by by Ronald G. Ragsdale

Time Sharing the PDP-6 by Thomas N. Hastings

A Data Acquisition System for Submarine Weapons System Evaluation Utilizing a PDP-8 by Robert H. Bowerman

Plant Wide Computer Capability (PDP-5) by James Miller

SPRING 1966 DECUS PROCEEDINGS

Use of a PDP-5 Computer in Analyzing Single Neuron Responses to Paris of Stimuli by David A. Penner and Paul D. Coleman

The PDP-8's Role in the Auto Chemist System by Dr. Hans Peterson

Digital Computer Techniques for Testing a Tapered Transmission Line Model of the Human Aorta by R. Hilton, S. Fich, and W. Welkowitz

LAP5: LINC Assembly Program by Mary Allen Wilkes

The PDP-5 as a Satellite Processor by Paul R. Weinberg and Michael S. Wolfberg

"IL-8" Interpreter Language for the PDP-8 by Peter D. Headley

Utility Programs for PDP-5/8 Computers by Edward Della Torre

The Use of a PDP-5 as an Educational Computer by D. A. Molony, E. Della Torre, and F. Skove

Computer Aids to the Handicapped - The PDP-8 as a Braille Translator by Henry S. Magnuski

Modules and PDP-5 Used to Synthesize an Adaptive Communications Receiver for Dispersive Channels by D. C. Coll and J. R. Storey

A Computer Controlled Linear Filter by J. R. Storey and D. C. Coll

On-Line Checking of Bubble Chamber Measurements by G. N. Krebs, R. J. Plano, and A. Zinchenko

Compatible Time-Sharing on a Small Computer by Martin L. Cramer

SPRING 1966 DECUS PROCEEDINGS (continued)

The Combination of On-Line Analysis with Collection of Multicomponent Spectra in a PDP-7 by N. P. Wilburn and L. D. Coffin

DECUS EUROPEAN SEMINAR - APRIL, 1966

A Bubble Chamber Measuring System by V. Commichau, M. Deutschmann, E. Keppel, and G. Kraus

A Scope Text Editor for the PDP-7/340 by Neil E. Wiseman

A General Purpose Network Description Program by H. P. Hutchinson

An Application of the PDP-7 to Aerodynamics by Keith Paton

The ML/I MACRO Processor by P. Brown

FORTRAN Programmed Output on Type 30G Display by M. J. Poole and E. M. Bowey

Data Analysis Systems with the PDP-4 by E. M. Bowey, M. R. Avery, and D. B. McConnell

Control Engineering Problems by M. Pleeging

The Manchester Van-de-Graaf On-Line Facility by R.L.A. Cottrell, J. C. Lisle, T. Daniels, and S. Kossionides

Problems of Time-Sharing a PDP-7 by B. E. Macefield

CORAL On-Line Time-Sharing System by G. Murray

On-Line Steel Sample Analysis with PDP-5 by H. Broekhuis

Use of PDP-8 Computers at AEC, Denmark, by L. P. Goodstein

Analysis of Particle Tracks in Spark Chambers by A. Seidman

ALBIN, A PDP-8 Loader for Relocatable Binary Programs by J. L. Visschers, P. U. ten Kate, and M.A.A. Sonnemans

FALL 1966 DECUS PROCEEDINGS

Welcome Address by Winston R. Hindle

ESI - Conversational-Mode Computing on the PDP-8/S by David J. Waks

FALL 1966 DECUS PROCEEDINGS (continued)

The BBN On-Line Programming System by Nancy E. Lambert

JOSS: Introduction to the System Implementation by G. E. Bryan

PDP-10 System Philosophy - New Product Announcement by David Plumer

PDP-6 System at LRL, Livermore, by John G. Fletcher

A Common Memory System for a Time-Shared PDP-6 by E. Brazeal and S. Sharpe

On-Line Real-Time Time-Sharing Operation of a PDP-7 by Lloyd Robinson and John Meng

PDP-8 as a Data Collector in a Time-Shared System by Robert Abbott

A PDP-5 Programme for Use in Nuclear Counting by D. R. Thompson, E. Wuschke, and A. Petkau

Flying-Spot Scanner by Ray Kenyon

The PDP-6's Role in Analyzing Photographs of Bacterial Colonies by Fraser Bonnell

Application of the PDP-5 to Data Handling for Meson-Produced X-Rays by Robert W. Lafore

DECUS EUROPEAN SEMINAR - OCTOBER, 1966

A Re-entrant Procedure for Minimal Core Usage in an On-Line Measuring System by C. L. Jarvis and K. Muller

KONRAD: A Real-Time Space Reconstruction and Kinematic Interpretation of Bubble Chamber Events from Ten Image Plane Digitizers Controlled by a PDP-7 Computer by P. G. Davey, P. Mokry, H. Schneider, and H. Strobele

Initial Nuclear Structure Experiments with PDP-7 by P. J. Twin and C. W. Lewis

A Simple List Processing Package for the PDP-7 by N. E. Wiseman

Problems of Time-Sharing a PDP-7 (2) by G. L. Olsson

Some Aspects of the Use of PDP-8's as On-Line Computers in High-Energy Experiments at DESY by F. E. Akolk

PDP-8 Supervisor (Task Management) by H. Frese

DECUS EUROPEAN SEMINAR - OCTOBER, 1966 (continued)

A Fast Data Transfer Organization for PDP-8 by H. Karl and C. Stolze

Measuring Machines On-Line to a PDP-8 by D. E. Lawrence

A PDP-8 Data Collecting System for Neutron Beam Experiments by E. E. Maslin

DECUS CANADIAN SYMPOSIUM - APRIL, 1967

The Executive Freedom of Decision-Making Machines by Dr. B. A. Bowen*

Variations on a Single-Instruction Computer by Ants Puust and K. C. Smith

A Medium-Scale Hybrid Interface by Glendon P. Marston and John S. MacDonald

Data Acquisition System by Garry J. Fischer

The Digital Computer in a High School Environment by C. B. Weick

Utilization of a Tape Recorder as a High Speed I/O Device by J.J.H. Park

Digital Computer Control of a Fuelling Machine by Henry A. Martin

The Servicing of Input/Output Interrupt for Real-Time Operation of Small On-Line Computers by R. H. Goodman

Shipboard Operation of Digital Computers by B. D. Loncarevic, R. Reiniger, and D. E. Wells

SPRING 1967 DECUS PROCEEDINGS

Software Support for a PDP-4/340 Display Configuration by H. Quintin Foster, Jr.

Displays for Studying Signal Detection and Pattern Recognition by T. Booth, R. Glorioso, R. Levy, J. Walter, and H. Kaufman

A Status Report on Some Applications of Processor Controlled Displays in Signal Analysis - 1957 to 1967 by Charlton M. Walter

Systems Analysis of DEC 338 Programmed Buffered Display by Stephen F. Lundstrom

Numerical Control Graphic System by J. A. Snow

Enhancement to a Time-Shared Operating System by Richard N. Freedman

SPRING 1967 DECUS PROCEEDINGS (continued)

The Computer Display in a Time-Sharing Environment by Thomas P. Skinner

X-Y Graph Production and Manipulation by J. W. Brackett and Roy Kaplow

Computer Image Processing of Biological Specimens by Stephen Lorch

High Precision CRT Scanning System by C. A. Bordner, Jr., A. E. Brenner, P. de Bruyne, B. J. Reuter, and D. Rudnick

A General Approach for Accomplishing Efficient Display Software by J. Richard Wright

TracD - An Experimental Graphic Programming Language by Barry Wessler

HELP - An Integrated Display System for Program Development by D. Friesen and J. Taylor*

Characteristics of Speech Displayed by PDP-8 by Morton M. Traum and Edward Della Torre

Electronic Speech Recognition System by Morton M. Traum and Edward Della Torre

DECUS BIOMEDICAL SYMPOSIUM - JUNE, 1967

Visualization of Brain Scans Using the PDP-8 and PDP-9 by Bruce J. Biavati*

On-Line Averaging with LINC-8 by Frederick L. Hiltz, Ph.D.

Error in Standard Deviation Computations Due to Truncation of the Mean by D. S. Ruchkin and N. I. Flemming

A General Purpose Programming System for the LINC Computer by Lloyd Marlowe

Backus-Normal-Form Compiler/Interpreter for Medical-Record Editing by P. A. Castleman and S. U. Robinson, III

Analysis of Single Cell Activity in the Central Nervous System by Phillip J. Best*

A Real-Time System for Operant Conditioning Using the PDP-8 by Robert H. Tedford

Digital Computers in the Behavior Laboratory by Bernard Weiss

A Notational System and Computer Program for Behavioral Experiments by A. G. Snapper and R. M. Kadden

DECUS BIOMEDICAL SYMPOSIUM - JUNE, 1967 (continued)

EKG Program Analysis Using the CRO and Calcomp Plotter by J. A. Burdeshaw and M. D. Perry

Remote Laboratory Input/Output Signal Conditioning Unit by Michael D. Perry

Real-Time Measurement of the Spontaneous Morphologic Variations of the Electrocardiographic P-Wave by M. D. Woolsey*

On-Line Analysis of Telemetered Arterial Pressure by George A. Bradfute, Jr.

A Sample Data System for Chemical Analyzers by Alan Theesfeld*

Software for Automated Mass Spectrometry by W. Reynolds, J. Bridges, T. Coburn, and R. Tucker

DECUS THIRD EUROPEAN SEMINAR - OCTOBER, 1967

PDP-8

A Speech Synthesizer Controlled by a PDP-8/338 by W. A. Ainsworth

A PDP-8 for On-Line Data Collection in an Electrolytic Tinning Line by H. Broekhuis

Writing of a Compiler for a Subset of the Scientific Language ALGOL on the PDP-8 (4K) by D. Clauzel

The Connection of Digitisers to a PDP-8 by R. Cooper and J. Read

Use of Laboratory Models in Hybrid Simulation by J. W. Elder

A KDF-9 Tape Channel Simulator by R. H. Jones and V. E. Kassessinoff

A DECtape Operating System for a PDP-8 Used in On-Line Data Collection by Dr. E. E. Maslin

A Stimulus-Response Programme for Hotel Room Inventories by D. W. Roberts

Assessment of Data from an Automatic Neutron Diffractometer Installation by J. W. Hall and K. C. Tuberfield

Cassandra - A Megachannel Time-of-Flight Analyzer by J. W. Hall

On-Line Debugging in a Real-Time System by S. de Vries

DECUS THIRD EUROPEAN SEMINAR - OCTOBER, 1967 (continued)

PDP-7

On-Line Particle Identification by P. R. Alderson and K. Bearpark

An Interface Between the PDP-7 and an IBM 2311 Disc File by R. A. Hunt

On-Line Handling of Nuclear Data by G. L. Murray

PDP-6

A Simple FORTRAN Compiler for Conversational and Other Use on the PDP-6 by R. Prescott

FALL 1967 DECUS SYMPOSIUM

A Computer Controlled Diffractometer by Howard Cohodas*

The Integrator/Computer System for Gas Chromatography Data Automation by A. T. Barrett, III

Data Acquisition and Analysis of High Resolution Mass Spectra in Real Time by M. L. Cramer and D. J. Waks

PDP-9T: Compatible Time-Sharing for the Real-Time Laboratory by M. M. Taylor, D. M. Forsyth, and L. Seligman

A Digital Electrochemical Control and Data Acquisition System by George Lauer and R. A. Osteryoung

Time-Shared Computer Control in Analytical Chemistry by Jack W. Frazer

Dedicated Computers for Instrument Control by Roger E. Anderson*

A Real Time Air Pollution Analysis System by Carter L. Cole

Automobile Exhaust Analysis System by Robert Jahncke

LINC-8 Text-Handling Software for On-Line Psychophysical Experiments by B. Michael Wilber

The LINC-8 in Research on Speech by Richard Harshman and Peter Ladefoged

Processing Physiological Signals by (Miss) Maxine Paulsen

Development of Cardiovascular Pulmonary Patient Care Techniques by Jerome A. G. Russell*

FALL 1967 DECUS SYMPOSIUM (continued)

A Programmed Distribution Generator by David N. Samsky

Analysis of Multichannel Analyzer Data with Light Pen and Function Box Techniques by C. Wendell Richardson

Automatic Calibration and Evaluation of Multichannel Analyzers Using a PDP-8 by W. Wayne Black

Tape Recorder I/O Operation in a PDP-8 Controlled Beta-Ray Spectrometer System by J.J.H. Park and J. Ohkuma

Adaptations of PDP-8 FORTRAN for Laboratory Computing by Russell B. Ham and Christopher B. Nelson*

An Integrated Disk-Tape Operating System for the 338 Buffered Display Computer by Jerrold M. Grochow and Thomas P. Skinner

Computers in the Laboratory: Education by Ronald G. Ragsdale

A Computer Data Link for High-Energy Physics Experiments by Sypko W. Andreae

Error Checking and Other Aspects of Data-Link Organization by Robert W. Lafore

Transmission of Link Data Over Telephone Lines by Alan E. Oakes

QOLFIM - An On-Line Film Measuring System (PDP-5/8) for the Processing of Bubble Chamber Photographs---Mark II by B. B. Culwick, E. Glazer, B. Lebowitz, and T. Meehan*

Gamma Ray Spectrum Stripping by F. Riess

Real-Time Data Analysis with FORTRAN by Albert Anderson

A Non-Linear Least-Squares Search Routine for a Small Computer by Thornton R. Fisher

Use of a PDP-9 for Real Time Off-Line Analysis of Spectra from an Aerial Survey for Radioactive Minerals by C. J. Thompson

The PDP-9 System at the University of Manitoba Cyclotron by L. W. Funk, J. V. Jovanovich, R. Kawchuck, R. King, J. McKeown, C. A. Miller, D. Peterson, D. Reimer, K. G. Standing, and J. C. Thompson

Track Follower - A System for Bubble Chamber Track Recognition by James P. Taylor

A Tutorial on Numerical Analysis with an Emphasis on Error Analysis and Prediction by Wayne A. Muth and Bruce C. Davis

INDEX OF DECUS PROCEEDINGS

1968

SECOND CANADIAN SYMPOSIUM

Small Computer Applications In A Power System by J. D. A. Griffin

Use Of The PDP-8/S For Data Acquisition And Control Of The Aerodist Airborne Survey System by G. R. Symonds

On-Line Psychoacoustic Experimentation With A Minimal PDP-8/S by C. Douglas Creelman

The Western Multi-Computer System by G. T. Lake

PDP-9T: Compatible Time-Sharing For The Real-Time Laboratory by M. M. Taylor, D. M. Forsyth and L. Seligman

Use Of Interative Processes In Evaluation Of Stresses In Statically Indeterminate System Of Elastic Bars by Adolph Feingold and Herbert R. Alcorn

Automatic Processing Of Absorption Spectra by Roch Lafrance

A Program To Simulate Nand Logic Systems* by I. A. Davidson

PDP-9 Operating System Workshop by James Murphy

A Remote Interface For A PDP-8 by Pierre Goyette

Some Experiences In Interface Design And Fabrication by E. J. Gabe and R. H. Goodman

A Six Channel Multiplexer For The PDP-8 Data Break Facility by R. Krishna

* Abstract Only

SPRING 1968 DECUS SYMPOSIUM

A Stimulus-Response Programme For Hotel Room Inventories by D. W. Roberts

The Fasbac Remote Access System by Dan W. Scott

On-Line Analysis Of Wire Spark Chamber Data by P. F. Niccolai, R. H. Bicker, M. Edwards and C. Swannack

SPRING 1968 DECUS SYMPOSIUM (continued)

PDP-8 On-Line Data Acquisition System For High Energy Physics* by Paul Shrager and Larry Taylor

The On-Line Use Of A PDP-9 And An IBM 360/65 In A Proton-Proton Bremsstrahlung Experiment Using Wire Chambers by D. Reimer, J. V. Jovanovich, J. McKeown and J. C. Thompson

Automatic Film Measurement With A PDP-9 by C. Drum, T. McGrath and R. Van Berg

A Computer-Controlled System For Automatically Scanning And Interpreting Photographic Spectra by C. A. Bailey, R. D. Carver, R. A. Thomas and R. J. Dupzyk

A PDP-8 System For Bubble Chamber Measurements by John Rayner

Strip, A Data Display And Analysis Program For The PDP-8, 8/I by John C. Alderman, Jr.

Bringing The Computer Into The High School Classroom by Michael L. Doren

PDP-8/S In The High School Classroom by Bud R. Pembroke and Dave Gillette

Project ASC by Robert M. Metcalfe

Closing The Educational Loop In Applied Mathematics (The On-Line Classroom) by J. W. Elder

A System For Presenting Programmed Instruction To The Deaf And Hearing Impaired by K. E. Rigg and James A. Boehm, III

A Computer System For Electrical Engineers by David M. Robinson

Computer Typesetting Of Mathematical Text: The Input Language Problem by Richard J. McQuillin

Use Of PDP-8 For Driving Photocomposition Machines* by Richard Falt

PDP-9T Timesharing: Phase I, Multiprogramming by D. M. Forsyth, M. M. Taylor and S. Forshaw

Extended Memory Fortran With An 8K PDP-7 by Philip R. Bevington

Implementation Of An On-Line Reactive (Typewriter) Language* by David Z. Polack

Disc Version Of Strip — A Data Display And Analysis Program For The PDP-8, 8/I by John Alderman

*Abstract Only

SPRING 1968 DECUS SYMPOSIUM (continued)

PDP-8 Oscilloscope Display Of Mathematical Functions Using Fortran by August E. Sapega and Stephen G. Wellcome

DPL — A Display Programming Language by Jeffrey H. Kulick

The Fasbac System — Time Division Multiplexing And The PDP-8 by G. Friend and Paul J. Bell

A Real-Time Multiple Task Executive Program With A Built-In Console Utility Package For PDP-8/S And PDP-8 Computers by C. D. Martin, Jr., and R. L. Simpson

FOCAL* by Rick Merrill

A PDP-6 Language For Simulating Complicated Biochemical Systems by David Garfinkel

A General Language For On-Line Control Of Psychological Experimentation by J. R. Millenson

A Tape Store For Biochemical Data by Harold W. Shipton

Automatic Spectrophotometric Identification Of Bacteria by Alan Ferry and Richard Martin

FOURTH EUROPEAN SEMINAR

PDP-8 Context Editor (Mark 5) by A. Freeman

A Simple Way Of Programming Loops by F. Picard

A PDP-8 PAL-3 Assembler For The IBM 360/65 Computer by A. C. Harris

Additions To The "8" Fortran System And Its Use With LINC-8 Magnetic Tape by G. R. Hervey

POPS — An Algol Subset For Interactive Computations On The PDP-8 by Trygve Matre

Sypol/Symag — An Extension To The Patch-Making Facilities Of DDT by I. Alcock

The Liverpool On-Line Data Acquisition And Analysis System by P. R. Alderson, N. Dawson and P. J. Twin

Pseudo-Random Digital Transformation In Megachannel Analysis by V. Bonacic, B. Soucek and K. Ceiljat

Integration Of Two PDP-8, A Multichannel Pulse Height Analyser And A DECtape In Nuclear Experiments by R. Chaminade, J. Pain, J. C. Faivre, M. L. Lechaczynski, J. Durruty, J. Demeuzois and J. C. Fabre

*Abstract Only

THIRD CANADIAN SYMPOSIUM - January, 1969

Revolutions in the Newspaper Industry By W. Haydn Morris

A Real Time System for Particle Identification By R. J. Kidney and C. A. Miller

Collecting Vector Electrocardiograms Using a Small Computer By Henry O'Beirne and R. S. Fowler

Automated Objective Hearing Tests Using the LINC-8 By R. Funnell, R. P. Gannon and C. A. Laszlo

A PDP-9 System for Spike Detection and Analysis of Multiple Unit Recordings By J. F. Feldman

A PDP-9 SPECIALIZED MONITOR FOR DATA ACQUISITION AND HANDLING By J. F. Feldman

Data Acquisition Systems for Meterology and Heat Transfer By E. E. Wuschke

A Computer Controlled Laboratory for Visual Perception and Human Learning By S. W. Link

A 4K Navigation Officer? By David A. Dalby

The PDP-8/S In An Educational Evironment By J. Davidson

Using the PDP-8 At the Technical Institute Level By G. Love, A. Harms and A. Robbins

A Limited Multi-Terminal System for CAI By David A. Ensor

Computer Controlled Audio Selection By A. R. Osborne

Write Protect Facility for the PDP-8/S By P. A. V. Thomas

Automatic Priority Interrupt for a PDP-8 By R. T. Millar

Use of a Small Computer to Control A Digital Plotter By R. J. Martin

Computer Simulation of Digital Machines By William R. Bezanson

Synchronous Communication Interface for the PDP-10 By Norman Housley

SPRING 1969 DECUS SYMPOSIUM

Computer Controlled Transmission Measurements By W. H. Knight

Interactive Data Display Techniques With a Color CRT Display By Hiram T. French and Lee B. Metrick

FOCAL Graphics By Richard Merrill

DISP - A Program to Provide 34D Display Capability in FORTRAN-D By Stephen G. Wellcome

A Graphical Interactive Systems for the CRT Input-Output of Chemical Structures By Andre M. Gagnoud

The PDP-9 As a Digital Processor In a Hybrid System By Christopher L. Cross, Jon C. Strauss and Thomas A. Fyfe

Multiplexing Without Tears By Caxton C. Foster

A Centralized Data Acquisition and Time-Sharing Message Switching System By J. W. Fryklund

Computer Assisted Instruction Using a PDP-8/L By K. Fauser and P. Wilcox

The Computer in Secondary School Social Studies By Donald C. Holznagel

Computer Education of Secondary School Teachers By Theodore R. Blakeslee and Ann G. Duffy

The Computer in the High School Physics Laboratory By Clifford C. Little

Incorporation of Computer Techniques in a Basic Course of Engineering Mechanics By Dr. A. Feingold

Remote Access Computer Output Over ITV System By Major R. L. Leech and Captain S. B. Fischer

The Peripheral Control Processor Anti-Timesharing for Small Computers By John C. Alderman, Jr.

An Implementation of SNOBOL-3 On a PDP-8/S By Mark Feathers

TALC - An Improved Linear Calculator By Bruce J. Taylor

Techniques for Compiling Large Fortran Programs for a PDP-9 Computer By Donald R. Donati and Suresh C. Mathur

JOANIE - A Multianalyzer Program for Pulse Height Analysis By Richard Hully

Use of a PDP-9 Computer In Nuclear Spectroscopy Measurements By M. Giannini and A. Aquili

A Simple Program for Pulse-Height Analysis With Time-Sharing for Routines Using the Peripheral Units By Birthe Olsen

Control and Monitoring of the SLAC Accelerator Utilizing a PDP-9 System By Warren C. Struven

On-Line High Energy Physics Analysis With a PDP-9 By P. Shrager, G. Snape and L. Teitelbaum

An Output Program Used with On-Line Data Collection By M. H. Foss and R. H. Bicker

SLAC Spiral Reader System By Michael J. C. Hu

SCOLDS - Spark Chamber On-Line Data System By Ray Jones and Clarence A. Tilger

An Electronic Counter to PDP-8/I Interface By M. Petrinovic and O. Cooper

Optimum Information Recovery From Bandlimited Data By C. N. Kelly, W. H. Frawley and E. O. Brigham

A Spectral Analysis Program for the Processing of Neuro-Electric Data By Francesca Urbano, Stephen G. Pauker and Frank E. Ervin, M.D.

A Disc-Based Operating System for Mass Spectrometry Experiments By Roger E. Frye, Barbara G. Slaughter and Donald E. Fraipont

Foreground/Background/8 By John C. Alderman, Jr.

Magtape FOCAL By John C. Alderman, Jr.

A Computer Controlled Isotope Ratio Mass Spectrometer Using Dry Reed Relays By Leslie C. Nelson, Jr., and Ralph J. Hemmer

A New Approach To On-Line, Run-Time Program Logic and Error Debugging Using Hardware Implementation By Robert S. Enabnit

SERF - Serial File Handler By Michael P. McCarthy and Jim D. Melton

PDP-9 ⇄ 1004 By A. R. Osborne and R. S. McLean

Analog-To-Digital Conversion Subroutines Developed on the PDP-7 Under the 9-To-7 Retrofit of the Advanced Software System By Francis W. Keller, John W. Cox and Daniel A. Brody

Plotter and Display Routines Developed on the PDP-7 Under 9-To-7 Retrofit of the Advanced Software System By John W. Cox, Francis W. Keller, Melvin D. Woolsey and Daniel A. Brody

The Interaction of Programs In a Syntax Directed Image Processing System for the PDP-10 By Richard Feldmann and Sam D. Bryan

Performance of the DEC PDP-10 FORTRAN Subroutine Library By J. M. Bennett

PDP-10 COBOL By Al Blackington

On-Line Computer Control of a Medical Multitest System By Harold Levy

Analysis of Multiple Medical Signals Using a Small Computer By Maxine L. Paulsen, Roger Simmons, M.D. and Caesar A. Caceres

Partial and Impartial Race Games for the Study of Human Problem Solving By Alick Elithorn and Alex Telford

WHAT - Another Simulation Language? By Fred R. Sias, Jr. and Thomas G. Coleman

Computer Controlled Dynamic Cineradiography By O. Fujimura, H. Ishida and S. Kiritani

A Multi-Purpose Logic Module for Behavioral Experiments By Arthur G. Snapper and Julius Z. Knapp

On the Varieties of Computer Experience By Steven J. Stadler

Can a Small Dedicated Machine Find Happiness In a Company That Pioneered Time-Sharing By Joseph Markowitz

Early Experience With the LINC-8 In a High Volume Clinical Chemistry Laboratory By John A. Lott, Ph.D., H. D. Gruemer, M.D., and Jacqueline A. Scott, B. S.

Clinical Chemistry Automation Using a PDP-8/L By S. A. Sondov

A System for Verifying the Reliability of Hospital Laboratory Data By S. A. Goldblatt M.D.

SPRING 1969 DECUS SYMPOSIUM (Continued)

Quality Control In the Hematology Laboratory Using Blood Indices By Thomas Slater and S. A. Goldblatt, M.D.

Fluid and Electrolyte Balance - Programs for Diagnosis and Corrective Therapy By S. A. Goldblatt, M.D. and Jeanne Boyer, M.T.

Clinical Laboratory Administration Using a PDP-8/L By W. H. Eldridge, S. R. Trost, and B. S. Langer

A New System for Source Document Data Processing - Developed in the Laboratory, Now Hospital-Wide By Thomas C. Hartney, M.D.

Interface for the Technicon SMA 12/60 Autoanalyzer With the LINC-8 LABCOM System By John L. Smith and Benjamin T. Williams

Automatic Monitoring of Postoperative Patients By F. John Lewis, M.D., Steven Deller, B. S., Michael Quinn, Martin Kite, M.S. and John E. Jacobs, Ph.D.

The Satellite Computer In Patient Monitoring By Gerald A. Masek, Ph.D., and David L. Roseman, M.D.

Monitoring of Clinical Data By Means of a Large Digital Computer By Howard K. Thompson, Jr., M.D., and Max A. Woodbury, Ph.D.

Real-Time Cardiac Arrhythmia Monitoring With the PDP-7 By C. L. Feldman, M. Hubelbank and P. G. Amazeen

FALL 1969 DECUS SYMPOSIUM

Interactive Graphical Generation of Finite Element Analysis Input Data By C. R. Carman and R. J. Pick

Computer Graphics and an Interactive Procedure for Network Function Synthesis By Richard K. McAllister

Integrated Real-Time Graphic Display System By D. R. Friedrichs and B. R. Smith

On-Line Interactive Inventory Control By Jules Lipow and Nancy Lambert Lipp

Techniques of Program Preparation for Small Computers By C. W. Richardson and E. W. Killian

An Interactive Graphics Facility Under the PDP-10/50 Timesharing Monitor By Harry R. Lewis

A Small Computer Used for Monitoring the Operation of a Large Solar Simulator By Roy McIntosh, Jr.

A Small Computer System for Logging and Manipulating Data From a Spectrometer Flown On a Planetary Probe By Robert E. McCullough

Interactive Editing of Radio Astronomy Data By Jon A. Meads

FALL 1969 DECUS SYMPOSIUM (Continued)

Using Small Digital Computers for Engineering Education By Dr. James C. Bowers

A Hybrid Magnetic Tape Transport As An Audio-Response Unit By Haruhisa Ishida

The Role of Hybrid Computers in Engineering Education By Prof. F. J. Ricci

Simulation As An Educational Tool By Ludwig Braun and Marion Visich, Jr.

An Interactive Signal Processing System By Charles L. Feldman, Francesca Wright, Geofrey Modest, and Frank R. Ervin

Light Pen for Doodling on the LINC-8 Scope By Karl Lowy and John R. Bartlett

The Presentation of Naval Tactical Scenarios on the LINC-8 By Dr. Robert A. Fleming

A Foreground/Background and Control System Using the PDP-8/I Computer in Psychopharmacological Research By Timothy O. T. Ts'o, Russell L. Stewart, Frank J. Karle

Automatic Data Processing on a Mini-Computer By D. Eugene Hokanson and Daniel Parrish

A Control System of a Speech Synthesizer (JAWORD) By LINC-8 By Kazuo Ochiai and Robert Krones

Applications of a LAB-8 Computer System to Behavioral Toxicology Research By Barry L. Johnson and Charlie Xintaras

An Automated Method for the Kinetic Characterization of Enzymes By S. L. Cooke, Jr. and G. N. Salaita

Boundary Layer Wind Tunnel Data Handling By Dr. D. J. Fader and N. Isyrimov

SNOBOL-10 SNOBOL4 for the PDP-10 By Larry Wade

Non-Standard Monitor Features at Stanford By Andy Moorer

Conversational System Performance and Measurement By Tom Hastings, David Plummer, Ronald M. Rutledge and Albin L. Vareha

An Extension to CCL (Concise Command Language) By Richard J. Feldmann

Computer Aided Design for M.O.S. Circuits By J. J. Kubinec

Gamma-Ray Spectrum Analysis Package for a PDP-9 By Ric C. Davies

A Program for Acquiring and Analyzing Gamma Ray Spectra for Use in Conjunction with the PDP-9 Background-Foreground Monitor By C. J. Thompson

Some Experiences with Pulse Height Analysis Using a Disk By David W. Jenson

An On-Line Reactor Fuel Assay System Using the PDP-8 By R. Perry, W. Lord, N. Beyer, and R. Brandenburg

An FFT For PDP-8/I Signal Processing By J. N. Lawson, R. N. Lawson and F. N. Eddy

Efficient Use of Personnel with a Computer By Victor L. Rosenberg

Foreground/Background/8 Now By John C. Alderman, Jr.

A Disk Simulator Using a Single Industry Standard Magnetic Tape Unit By David D. Custer

FALL 1969 DECUS SYMPOSIUM (Continued)

PAL, FORTRAN or FOCAL for Data Acquisition By E. E. Wuschke and F. McGovern

Universal I/O Handler for FOCAL By John C. Alderman, Jr.

SODT: A Scope Octal Debugging Tape for Family-8 Computers By R. I Bystroff and Roger E. Anderson

An Inexpensive High Speed PDP-8 Data Break Interface By Robert L. Swearingen

DDI: Digital Device Interface By Carl D. Lowenstein and Martin D. Benson

A Time-Sharing System for the PDP-9 By David A. Ensor

Program Description of the Ones Complement Arithmetic Operations and Macro Language for PDP-9 Computer By R. F. Wells

Background-Foreground Operation in an Automated Design Facility By Harry M. Taxin

Improved PDP-9/15 FORTRAN Executive Analysis By W. A. DeSimone and James R. Bell

HYMAC, A Hybrid Computing Macro-Assembler By Lawrence H. Gerhardstein

Upgrading Case Historical Data With Computer Assited Reporting By Gilbert Honingfeld Ph. D.

Use of a Small Computer for Reporting Medical Examinations By Joseph M. Edelman, M. D. and Thomas B. Flynn M. D.

A Time-Sharing Operating System for Clinical Data Processing By R. S. Langer

On-Line Data Acquisition From Automated Instruments By Steven A. Sondov

Programs and Tables for Processing and Reporting Clinical Laboratory Tests By W. H. Eldridge

Clinical Data Structures By S. R. Mateosian

A Modular Approach to an Intensive Care Patient Monitoring System By Avram-Chaiyim Miller, Jerome A. G. Russell, Peter R. Harris, and Paul G. Hugenholtz

Computer Analysis of the ECG Data Using Decision Tables Techniques By Josef Wartak and John A. Milliken

CLACH-Data System for a Clinical Laboratory By Lief Olsen

A Real-Time System to Collect and Analyze Data of Ambulation With a Prosthetic Leg By John Allen Jones

A Computer Controlled and Generated Multi-Dimensional Display Device for the Investigation and Modeling of Physiological Systems By John A. Harris and Richard DeJohn

An Application of Algebraic Coding Theory to Information Retrieval By Mark S. Arisohn

A Compression and Real-Time Movie Playback Scheme for the DEC-338 Computer By Noel Bernstein

A Simple Time-Sharing System for Speech Perception Experiments By W. A. Ainsworth and J. B. Millar

The Alfacode Programming Language for PDP-8 Computers By Torbjorn Alm

Anwendung Einer PDP-8 In Der Nuklearmedizin (Usage of a PDP-8 In Nuclear Medicine) By W. Ammann and J. Doll

Radiation Treatment Planning Using a PDP-8/I By R. E. Bently, J. Milan, and D. Cope

Application of the PDP-8/5 and Digital Stepping Recorder and Digital Display for Automatic Magnetic Field Measurement By L. J. Besse

A PDP-9 Computer Program for On-Line Calculation of Mean Values, Variances and Amplitude Distributions By Ake Bliselius

LINC-8: The Sophisticated Tachistoscope By Geoff Cumming

On Line Computing In a Nuclear Structure Laboratory By G. I. Crawford

On-Line Processing of Vector Cardiograms by PDP-9 By J. S. Duisterhout, J. H. v. Bemmel, G. van Herpen, B. Versteeg, S. J. Hengeveld and L. G. Bierwolf

A Simple Message-Handling System for Telexnetwork on a PDP-8 By Ir.Th.den Dunnen

The Teaching - 8 By John Elder

Messdatenverarbeitung In Der Automobil-Sicherheitsforschung (Measured Data Analysis In Automobile Safety Research) By Dipl. - Ing. J. Elsholz

Impedance Plethysmography and Cardiac Output By E. J. Flanagan

Der Einsatz Einer PDP-8/S Als On-Line-Reachner In Der Szintigraphie (The Addition of a PDP-8/S As An On-Line Computer In the Szintigraphie) By A. Habermehl, P. Eisenhauer and E. H. Graul

Instruction and Data Mode Program Testing a Debug and Trace Suite for PDP-8 with Extended Memory By J. W. Hall

The Design and Philosophy of a Crystallographic Data Collection System By A. C. Harris

Oxford Pepr Production System By J. F. Harris

Use of the LINC-8 Backing Store to Provide Editing, Fast Compilation, and Extended Facilities for FORTRAN Programs By G. R. Hervey

An Interrupt Handler with Masking for the PDP-8 By P. F. Jones

Real Time Data Acquisition and Monitoring Using the PDP-9 Keyboard Monitor System By R. H. Jones

Scissoring a Network for the 340 Display By A. C. Kilgour

The Use of a Coupled PDP-9/360 System for Computer-Aided Design By P. T. Kirstein, A. R. Duncan, I. H. Gould, F. Huber, D. Lalla, N. P. Lynch, P. Rakity, A. K. Rothstein and J. Shane

Operator Guide - Plate Rolling By Birger Kvaavik and Per Ola Sahlin

PDP-8/S - 1905E Link By G. Langholz

MATROP, A Package of Matrix Subroutines By A. Van Lunteren

FIFTH EUROPEAN SEMINAR (Continued)

PDP-8/S 3 Input Universal Logic Modules Simulator By E. H. Mamdani

Service and the User By Vince Marshall

A Program for Simultaeous Simulation and Data Handling in Neurophysiological Research By J. Michaux and J. Bergmans

Pictures Input with a T.V. Camera By Thierry Monnerot

Datasystem For a Clinical Laboratory Based on the Autochemist By Leif Olsen

A Data Logging System Utilising A PDP-8/S Computer By Dr. M. L. Poole

Fast Data Acquisition and Pre-Elaboration System For Nuclear Dynamic Experiments With a Sodium Loop By Paolo Prudente

Real Time Analysis of Fatigue Data By A. Reid

An On-Line 64K Kicksorting Program for an 8K PDP-9 By Ph.B. Smith and P. J. M. Smulders

Hardware and Software for an On-Line PDP-9 Input System for Vector Cardiograms B. Versteeg, L. G. Bierwolf, J. H. v. Bemmel, and J. S. Duisterhout

Use of a PDP-9 for Processing Digitised Cartographic Data By D. W. Vicars

Simplex Solution for Cost Minimisation on the PDP-8 By Roger Willis

Predictive Monitoring with the LINC-8 By C. C. Wilton-Davies

Data Acquisition and Control of a Radioastronomical Spectrograph Using a LINC-8 By Anders Winnberg

FOURTH CANADIAN SYMPOSIUM - September 1970

A Fast Loader for PDP-10 FORTRAN by Jack M. Emerson

PDP-10 System Performance Measurement by Lorine E. McHardy

Computational Technique for Economical Storage of Large Sparsed and Banded Matrices by R. N. Malhotra, S. Mirza and A. Feingold

How to Beat the Input Bottleneck in Using the PDP-8/S in Classroom Situations by John Kiss

Author and Student Controlled Mathematics Instruction by Computer with CAN-4 by William P. Olivier

PSYCLE - A Language for the Control of a Class of Experiments by Vincent K. Taylor and Carol A. Mains

PDP-9T System: An Overview by M. M. Taylor and V. K. Taylor

Time-Sharing or Dual Computers by C. St-Pierre

FOURTH CANADIAN SYMPOSIUM (Continued)

TSS-9 Status Report by Ronald G. Ragsdale

A Peripheral Switcher by C. St-Pierre

Remote Teletype Distribution System at DRET by Gordon T. Chillcott

Operation of Devices at a Distance the 'Remote Bus' by W. W. Demmery

Programming for Advanced Monitor Compatibility by Philip Olynyk

Real-Time Preview for Computer Aided Movies by G.J. Savage, J. K. Cook and M. L. Constant

Pattern Recognition on Biological Signals: A Supervised Interactive System by J. F. Feldman

Filtering Non-Linearly Combined Signals by G. A. Jullien

A Real-Time Operating System for Process Control by James E. Storm

OS12 - A Modular Operating System for the PDP-12A by Philip O. Dufty

A Logic Character Generator for Use in a Computer Graphics Facility by P.A.V. Thomas and W. E. Mennie

Nuclear Medicine In-Vitro Data Processing with a PDP-8/L by Robert T. Morrison, M. Bernstein and E. L. Archibald

SPRING 1970 DECUS SYMPOSIUM

Hardware Design for a Multiprogramming System for a Medium Scale Computer by S. J. Boies, J. L. Lewis and A. R. Murphy

A Real Time Multiuser Foreground, Single User Background System for the PDP-9 Computer by George Lauer

PDP-9/15 Multiuser Programming by Richard Hully

Zoroaster: A Multiprogramming System for Psychological Research by J. L. Lewis, S. J. Boies and G. W. Osgood

Computerized Information Retrieval for Nuclear Reactor Systems by F. P. Blackstein

Computer Simulation of Nuclear Reactor System's Capability by F. P. Blackstein and W. A. Wolfe

Adaptation of a Gamma-Ray Spectral Analysis Program for a PDP-9 by Donald R. Donati and Suresh C. Mathur

Preliminary Processing of Multiplexed Two-Parameter Gamma-Spectrometer Data by J. E. Fager and J. H. Kaye

Bliss: A Language for Programming Systems by W. A. Wulf, A. N. Habermann and D. B. Russell

IAM: A System for Interactive Algebraic Manipulation by B. C. Wheelock

A FOCAL Controller for Neutron Diffractometry by Doug Wrege

FOCAL as a Data Reduction Tool by Eric Covington

A Computed Line Number Capability for FOCAL by Allan B. Wilson and Fred R. Sias, Jr.

PDP-11 Subprogram Calling Sequence Standards by Harlan P. Shepardson

Current Integrator to PDP-9 Computer Interface by C. DeLizza

High-Speed Multiplexed A/D Converter for PDP-9 by Dr. Irving H. Thomae

Computer-Aided Control of a Large, Accurate Micrscope by J. W. Davis

A Hardware Multiplier/Divider for the PDP-8/S Computer by P.A.V. Thomas and N. Balatoni

Mini Cost - Maxi Display by L. J. Besse

Machinery Room Data Acquisition System by Stanley Hochman

A System for the Automatic Collection of X-Ray Intensity Data by Susan Swager

CPS - An Operating System for DEC Mini-Computers by Gerald N. Cederquist and K. Metger

The MIT Man Vehicle Laboratory PDP-8 Programming System by Noel A. J. Van Houtte and Charles M. Oman

TIME, A Timesharing Monitor for the DEC LINC-8, PDP-8 and PDP-12 by Peter T. Schwenn

Quintupling the Speed of the PDP-8 DF32 DISC System for Real-Time Use by Noel Bernstein

An Advanced Fast System I-O Routine for the DECtape Oriented PDP-8 Disk/DECtape Monitor System by Robert S. Holmes

A Communications System for News Services by Irving J. Kuperman

Processing Weather Radar Data with a Small Computer by James H. Boardman

SPRING 1970 DECUS SYMPOSIUM (Continued)

Simulation of Neural Nets by Brad Cox

CAN4, An Advanced Author Language for CAI, Computer-Based Testing and Psychological Experimentation: PDP-9 Implementation by Stacy Churchill, Lars Naess and William P. Olivier

The University of Oklahoma System for Teaching About and With Computers by J. Christensen and P. Vargo

A Case for the Small Computer by F. F. Mazada

The Role of the Small Computer in Education by C. Joseph Sass

Hybrid Computer Display Techniques Involving a PDP-8 by Noel A. J. Van Houtte and Charles Oman

An Alpha-Numeric Display for the PDP-9 by John R. Goltz

SELCIR (System Engineering Laboratory Circuit Drawer) by James F. Blinn

A Device to Make a Rand Tablet Act Like a Light Pen by Harry R. Lewis and M. C. Bruce

FALL 1970 DECUS SYMPOSIUM

A Computer Controlled Multi-Station Tuning System for Hybrid Integrated Circuit Oscillators by J. L. Cubel and J. Pearson

Mini-Computer Controlled Data Collection System by John L. Barney and Donald K. Kelly

A Data Acquisition System for Petroleum Refining or, How to Turn a PDP-8/I into an 11-Bit Computer by Kenneth F. Norris

The Adaptive Move Analysis of the Atmosphere of Mars by Jeffrey B. Pearce

On-Line Pulmonary Function Analysis: Program Design by Dario B. Domizi and Richard H. Earle

On-Line Analysis of Pulmonary Function Tests Using a Small Digital Computer (PDP-12) by Richard H. Earle, Paul Schlesinger and Dario B. Domizi

Computer Managed Interaction Between Patient, Technician, and Medical Instrumentation in a Pulmonary Physiology Laboratory by Robert L. Keenan and Charles Mittman

On-Line Computer Control, Testing and Analysis of Myocardial Effects of Chemical Agents by A. Baranco, J. Levy, R. P. Abbott, J. Russell, J. Shore, E. Johnson and A. Vujevich

FALL 1970 DECUS SYMPOSIUM (Continued)

A Medical Information System by A. Brantley, W. E. Hammond, H. K. Thompson, Steven J. Feagin, Stephen G. Lloyd and William W. Stead

Multi-Disease Diagnosis Using FOCAL by R. H. Swatzell and E. E. Eddleman

PDP-8 Series Studies of Dynamic Relocations of Radioactive Isotopes by Gustave F. Kilthau

Software Design for Automation of Blood Serum Analysis by D. R. Christy and K. W. Bixby

Real-Time Program for Sensing Optimum Conditions for Stimulus Presentation: Improved Experimental Controls for Psychophysiological Research by C. A. Kuechenmeister, H. Y. McClusky, P. Linton and Jack D. Hain

An Advanced Computer System for the Pharmacuetical Safety Assessment Laboratory by W. S. Stewart, J. B. Hall and R. T. Mullen

Graphic Software for an AGT/10 by G. C. Hebert

Printed Circuit Board Editing with Graphic Display Systems by James F. Callan

How to Forget that you have four 360/50's, a 360/75 and Make Good Use of your PDP-10 by Thomas DeFanti

New Hardware Instructions for the PDP-10 Central Processor by J. C. Paradi

Use of Two Time-Sharing Systems in a Graduate Studies Program by R. S. McLean, W. P. Olivier and R. G. Ragsdale

The Need for Computer Technology in Engineering Education by Don S. Harmer

Small College, Small Budget, Regional Computer Center by Roger W. Strickland

Computer Applications to Dynamics by A. Feingold and S. Mirza

Effect of Truncation and Sample Rate on Derivative Algorithms by Edwin Wells, Michael Negin and Mark Shapiro

The Effect or Random Signal Acquisition on Averaged Response Computations by Michael Negin and Eugene Kwatney

PICSY - A Program Input and Control System by Donald H. Zurstadt

Optimization of Small Computer I/O Through a Software Interface to a Larger Computer by Mary L. Dick and Joan Smerchanski Adams

Use of the PDP-8/I for Formant Tracking and Classification of Speech Sounds by Russell J. Niederjohn, Ian B. Thomas and Donald E. Scott

Some Effects of PDP-8/L on Computer Output Microfilm by Patrick F. Brennan

Digital Cassettes - A Practical Alternative for Peripheral Data and Program Storage by A. Gajate and H. F. Wochholz

Expansion of Computer Memory with a Block Oriented Random Access Memory by Jerry A. Kastning and Edward J. Beach

An Interface for a PDP-8/I and an IBM 1402 Card Reader by Edward J. Beach

Interface of PDP-12 Computer and Optical Scanner by W. E. Hammond, Alton Brantley and H. K. Thompson

A Microprocessor Driven Versatile Display System for the PDP-8 by Philip O. Dufty and Zvonko G. Vranesic

Interfacing the PDP-12 to a Sequential Sampler for Electrochemical Measurements by Robert W. Rogers, Walter E. Goldstein and Dennis H. Johnson

A System for Interfacing an Electrographic Line Printer to a PDP-9 Computer by James V. Hu and G. C. Vogel

Dual Processor Graphics Facility by Robert C. Larkin

Dow Badische's PDP-8/I Time Shared System by Andy Andrews

Use of EAE on the TSS-8/I by Robert Domitz, Charles Losik and David Sobin

Adapting Peripheral I/O to the Disk Monitor System Through Command Decoder by Aileen H. Lineberger

Diffusion Simulation by Random Walk in a PDP-8/I by George J. Thomas and William F. Chambers

A Computer Assisted Microprobe Laboratory by William F. Chambers and Fred I. Magee

Advanced FOCAL for the PDP-9/15 by Ronnie L. Darby and Fred R. Sias

A Faster, More Compact Chaining Procedure for the PDP-9 by D. H. Zurstadt

A Simple Method of Multiprogramming the PDP-9 Computer by James H. Puls

Waterloo FORTRAN IV for PDP-9/15 by James A. Smith and James A. Field

On-Line, Real-Time Power Spectrum Measurement by A. L. Connelly

SPECTR - A Program for Handling and Analyzing Multichannel Pulse Height Spectra by Donald H. Zurstadt

FOCAL for the PDP-11 by Richard M. Merrill

FALL 1970 DECUS SYMPOSIUM (Continued)

IAM: A Computer-Based System for Interactive Algebraic Manipulation by Carlos Christensen and Charles Muntz

Interactive Simulation Language-8 (ISL-8) by R. D. Benham

AIPOS by Charles Romeo

Floating Point Processor for the PDP-8 and PDP-12 Computers by Stephen Teicher and Leonard Hughes

Simplified Nuclear Magnetic Resonance Signal Averaging by James W. Cooper

SIXTH EUROPEAN SEMINAR - September 1970

Small Computer or Intelligent Terminal by Alick Elithorn

Inter-Process Communication by the Switchboard Mechanism by J. S. Fenton

The Implementation of a PDP-10/PDP-7 Dual Computer System by P. J. Hagan and B. E. F. Macefield

A Link Between a PDP-7 and PDP-10 Computer by R. Hunt

Software for Handling Data Records from Parallel Processes by H. H. Johnson and B. R. Shearer

PDP-8/I for Real-Time Air Traffic Control by R. A. Lees

The Use of the PDP-8/S - ICL 1905E Link by P. C. Williams

Bookkeeping Program Package for Accountants by Josef Bock

Experience with Commercial Software Systems for PDP-8 by Oswald H. Nikolaus

Medical Casesheet Storage and Analysis by PDP-8 Computer by B. D. Young, J. A. Kennedy, T. D. V. Lawrie

PDP-10 ALGOL by R. M. DeMorgan

The Implementation of ALGOL on PDP-9/15 by E. N. Hawkins and J. D. Smart

An Unusual Multiplexed Analog-to-Digital Converter for a PDP-9 (or Similar System) by E. R. Kooi

Optical Scanner Control by PDP-15 by J. F. O'Keefe

An Extended Toolkit for the PDP-10 by P. J. Weston and K. I. McKenzie

SIXTH EUROPEAN SEMINAR (1970-Continued)

PDP-10 System Concepts and Capabilities by David L. Stone

A New Graphics Overlay for 8K FOCAL by J. F. Anthoni

A General Description of the Implementation of ALGOL 60 for the PDP-9 and PDP-15 by M. W. J. Bolas

A PDP-9/CDC 6600 Coupled System by I. H. Gould

DDC Parameters Optimization by FOCAL Programs by G. Schgor and G. Cortese

Kartenleser-Overlay Fuer FORTRAN-D by H. Steiger

Handler fur das da 10 Interface Zqischen PDP-9 und PDP-10 by Von T. Korteweg and H. P. Hougardy

Ein Handler fur den Mebstellenumschalter AF01 by Von H. P. Hougardy

A Set of Numerical Subroutines for use with a BASIC (4K) PDP-8/L Computer by J. R. Sanderson

A Plotting Package for the PDP-9 by S.J. Hengeveld, J.H. Van Bemmel, J.S. Duisterhout and B. Versteeg

Organization and Programs of a Process Control System by Jan.-I. Kasteng

Numerically Controlled Machine Tool Tape Verification by J. R Cookson

Computer Control for a Digital Telephone Switching Experiment by Dr. C.P. Villars and L. N. Pouget

A New System for Numerical Control of Drawing Tables and Machine Tools by Gerald P. Duelen

The PDP-14 Programmable Machine Controller by John Naples

Waveform Recognition for V.C.G. Processing by J.S. Duisterhout, J.H. Van Bemmel, G.V. Herpen, V. Versteeg, S. J. Hengeveld and L. G. Bierwolf

Bau und Wirkungsweise Eines Schnellen Interfaces fur Gamma-Kamera und PDP-8/S by P. Eisenhauer, A. Habermehl, K. Joseph and E. H. Graul

A Hybrid Analogue-Digital ECG Analysis System by Miss M.R. Hoare, A. C. Arntzenius, J. Roelandt, J. D. Laird and A. C. Miller

A Computerprogram on an Analogous Signal, Composed of a Superposition of Different Frequencies to be Analysed in its Components by Drs. S.T.S. Kapteyn and S.G. Mey

SIXTH EUROPEAN SEMINAR (1970-Continued)

On-Line Verabeitung von Massenspektrometersignalen die bei der Messung des Gasgehaltes von Flussigkeiten Auftreten, Mit Einer PDP-8/L by D. Look and P. Lotz

A Blood Analyser Using the PDP-8/I by E. T. Oram

LINC-8 in Clincal Objective Audiometry by M. Spreng

Observations of Correlations in Heart- and Breathing-Rates in Young Infants by J. G. Veninga and J. R. Luyten

A Method for the Quantitative Description of Cardiac Arrhythmias by B. Versteeg, J.H. Van Bemmel, A. F. L. Veth and J. de Haan

PDP-8 A L'accelerateur Lineaire de 300 Mev de Saclay by G. Bianchi et O. Deneufbourg

Use of Two PDP-8 in Mean Energy Nuclear Physics by B. Bricaud, R. Chaminade, J. Durruty, M. Lechaczynskiet, J. Pain and C.E.A. Saclay

Nuclear Spectrum Analysis by PDP-8/I by P. de Regge

Control of Manual Measurements of Bubble Chamber Film by a PDP-8 by F. Gandini, P. Schlamp and J. Seyerlein

A Method of Interfacing to the PDP-8 by F.A. Van Hall and E. Kwakkel

Eine "On-Line" Messmethode zur Aufnahme Zweidimensionaler Spektren by D. Harrach, J. Glatz and K.E.G. Loebner

A Satellite Computer for a PDP-6 by G. I. Martin

Background Subtraction from Neutron Spectrum by J. P. Meulders and J. M. Das

AMAVI - A FORTRAN-IV Program for the Unscrambling of Proton Recoil Spectra in a Fast Neutron Decay Time Measurement by Ph. Monseu

Systeme Temps Reel Pour Premesure de Cliches de Chambre a Bulles by M. J. Robert

ARNULF: A PDP-10 Program for Rapid Acquisition of Complete Film Information by a Pepr-Device by Roland Schmidt

PDP-7 Als Steuerelement in Einem Mehrrechnersystem by C. Stolze

A PDP-8/L Controlled Device for Measuring Large Bubble Chamber Films by P. Sturzinger, C. Verkerk, A. Fucci and C. Mazzari

A Method for Interfacing to the PDP-8 by F. A. Van Hall and E. Kwakkel

The Use of a Process Control Computer to Evaluate the Characteristics of Electrochemical Electrodes by F. Steffens and K. D. Beccu

SIXTH EUROPEAN SEMINAR (1970-Continued)

Erfassung und Auswertung Akustischer Messdaten Mit Hilfe Eines PDP-8/S - Rechners by Hans Stawinski

Time-Shared Test System for Alfaskop Display Controllers by Arne Soderkvist

Versuchssteuerung und Mebwerterfassung in Turbomaschinenprufstanden Mittels Einer PDP-7 by Dr. Ing Karl Rubner

Processing of Size Distrubtion of Rain Drops by H. P. Roesli and J. Joss

Mebwerterfassung und Versuchessteuerung by Manfred Muller

A Computer Controlled Spectrograph for Recording Spectra of Transient Species by Herbert Kanzig and U. P. Wild

Answering Datel Telephone Calls by PDP-8 by David W. Harvey

The Analysis of Radar Data by J. G. Harp

Einsatz Einer PDP-9 in der Quantitativen Metallographie by Von K. Grefen and H. P. Hougardy

Datenerfassung Uber Analog-Digital-Wandler Bei Schnellen Vorgangen by Ing. (Grad.) Werner Diehl

Ein Digitales Druckmebverfahren Mit On-Line Betrieb Einer PDP-7 by Dr. -Ing. Josef Derse

A Data System for the LINC-8 by C. C. Wilton Davies

SPRING 1971

Page

PREFACE v

LANGUAGES - DEVELOPMENTS AND IMPLEMENTATIONS

PS/8 BASIC
Don Baccus and Gerd Hoeren. 1

THE KLUDGE PROGRAMMING LANGUAGE
Barry Smith 3

TECO-8 FOR PS/8
Don Baccus and Barry Smith 5

IMPROVEMENTS TO THE SKED PROCESSOR CONTROL SOFTWARE SYSTEM
Andrew Walker and Arthur G. Snapper. 7

TEXT12: A GENERAL PURPOSE TEXT PROCESSOR
Edward Walter and W. E. Hammond 13

ISAR OF GEMISCH
W. E. Hammond 19

BLISS-11: AN IMPLEMENTATION LANGUAGE FOR THE PDP-11
Ronald F. Brender 23

MANTIS: A NATURAL DEBUGGING AID FOR PDP-10 FORTRAN
Loren Salmonson, Robert Heilman and Gordon Ashby. . . 29

DIMENTIONAL CHECKING OF EQUATIONS IN ALGEBRAIC COMPUTING LANGUAGES: AN IN SITU METHOD
Howard C. Howland and Sam Rhine 35

OPERATING SYSTEMS

IBIOS -- AN INTERACTIVE BUFFERED INPUT-OUTPUT SYSTEM FOR THE LINC-8
Robert L. Stout 39

FOREGROUND/BACKGROUND/8 WITH 8K OR MORE FOR BACKGROUND USE
N.S. Kendrick, Jr. 43

A SIMPLE MONITOR FOR DISK STORAGE OF FOCAL PROGRAMS WITH FLEXIBLE SUBROUTINE LINKING
M. T. Kelly 53

A SOFTWARE SYSTEM FOR A PDP-8/I MOBILE REMOTE STATION
Marvin L. Zeichner 59

RSX-15 REAL TIME EXECUTIVE
Henry Krejci 67

SON OF ZORO: A SECOND GENERATION MULTI-PROGRAMMING SYSTEM FOR PSYCHOLOGICAL RESEARCH
J. L. Lewis and G. W. Osgood 73

THE PDP-9 BACKGROUND/FOREGROUND ENVIRONMENT AT LOWELL TECHNOLOGICAL INSTITUTE NUCLEAR CENTER
R. Hully, D. Donati, C. DeLizza and S. Mathur. 75

CONVERSATIONAL MONITOR-8
John Elder. 79

DATA ANALYSIS

ON-LINE DETECTION OF EEG SPINDLE ACTIVITY
R. S. Grabowy and E. H. Ellinwood, Jr.. 85

SPIKE TRAIN ANALYSIS ON A PDP-12
M.S. Denny, C. F. Lam and S. Katz. 93

ON-LINE DIGITAL FILTERING USING PDP-8 OR PDP-12
M. A. Soderstrand 95

THE USE OF A MINI-COMPUTER FOR DATA PREPROCESSING IN STATISTICAL ANALYSIS
John W. Lane, John W. Starr, F. Dorsey and H. K. Thompson 105

CALORIMETRY DATA ACQUISITION AND CONTROL
J. C. English 107

ISOID - AN ISOTOPE IDENTIFICATION PROGRAM FOR A 16K PDP-9/15 COMPUTER
D.R. Donati and S.C. Mathur 111

HARDWARE DEVELOPMENTS

ACQUISITION AND DISPLAY OF NUCLEAR MEDICINE IMAGE DATA WITH A DEC PDP-15/20 COMPUTER
W.K. Legler, W.F. Herrin, R.G. Robinson and A. W. Templeton 115

A UNIVERSAL SERIAL INTERFACE FOR DATA SET, TELETYPE, AND INTERCOMPUTER CONNECTION
R.C. Barrett and W. J. Lennon 121

THE COMPUTER-OPERATED RESISTIVITY TEST SET
W.H. Knight 127

A MACHINE AIDED SCHEME FOR FRAME FILM DATA EXTRACTION
Ernest H. Hayden 131

A DIGITAL TIMING DEVICE FOR A HYBRID COMPUTING SYSTEM
G.A. Reynolds and P.T. Hulina 137

WORKING SESSIONS

MANAGEMENT PROBLEMS OF LARGE SYSTEM DEVELOPMENTS ON SMALL COMPUTERS
Richard Zapolin 145

Page

FORMATION MEETING OF A SPECIAL INTEREST GROUP: LABORATORY USERS OF DIGITAL EQUIPMENT COMPUTERS
Marshall Melin. 155

REPORT ON EDUCATIONAL USERS SPECIAL INTEREST GROUP FORMATION MEETING
D. S. Harmer 157

REPORT OF FORTRAN WORKING SESSION
S. R. Shapiro 159

REPORT ON THE INSTALLATION MANAGEMENT WORKING SESSION
George Lanphere 161

PDP-9/15 BACKGROUND/FOREGROUND WORKSHOP AND ADVANCED SOFTWARE WORKSHOP
Russel Geiseman and F. R. Sias, Jr. 165

PDP-8 DISK MONITOR SYSTEM WORKSHOP
W. J. Lennon and R. C. Barrett 169

SUMMARY OF THE WORKING SESSION ON "INEXPENSIVE MASS STORAGE DEVICES FOR USE WITH MINI-COMPUTERS"
J.J. H. Park. 171

REPORT OF BATCH WORKING SESSION
J.R. Mager 173

TUTORIALS

OPERATING THE KEYBOARD MONITOR FROM DISK OR DRUM USING DECTAPE OR MAGNETIC TAPE
R.C. Davies 175

OPTICAL SCANNING PRODUCTS DEMONSTRATION SYSTEM
W.F. Mayhew and Douglas A. Cassell. 183

APPENDIX

PAPERS PRESENTED - NOT SUBMITTED FOR PUBLICATION TION 193

AUTHOR/SPEAKER INDEX. 195

ATTENDANCE 197

FALL 1971

Preface v

"10" MONITOR PAPERS

SMART: A MULTIPLE-HIGH-SEGMENT EXECUTIVE SYSTEM
William H. Moore and A. S. Cooperband. 1

CCBS 10/50 MONITOR CATALOGUER
Peter S. Baker. 5

RAMEM - RANDOM ACCESS MAGTAPE ENTRY METHOD
Donald L. Feinberg 11

MAKING AN EXISTING SYSTEM PROCESS STRUCTURED
Donald J. Black. 15

MEDICAL AND PHYSIOLOGICAL APPLICATIONS

LINC-8 SAMPLING AND ANALYSIS OF RHEOENCEPHALOGRAPHY WAVEFORMS
J.W. Lovett-Doust, W.D. Payne, R. Sodana and J. Watkinson 19

ANSWER - ALGORITHM FOR NON-SYNCHRONIZED WAVEFORM ERROR REDUCTION - A BIOMEDICAL ADAPTIVE FILTER FOR THE LAB-8 COMPUTER
Stephen E. Robinson. 29

A SIMPLE TECHNIQUE OF BEAM GENERATION FOR THE RAD 8
P. N. Shrivastava. 35

THE SEGMENTATION OF SPEECH SOUNDS
Joel Marshal Norvell 41

COMPUTER AIDED ANALYSIS OF SINGLE MOTOR UNIT MUSCLE ACTION POTENTIALS
Robert J. Hanson 45

HEALTH SCIENCE RESEARCH AND HEALTH CARE DELIVERY ANALYSIS WITH A SMALL COMPUTER
Bruce A. Borass 49

GRAPHICS

A PROPOSED INTERACTIVE GRAPHICS SYSTEM FOR CLASSROOM USE IN THE ENGINEERING SCIENCES
George Kleiner 53

GRAPHICS SOFTWARE FOR TWO-DIMENSIONAL FILLING
Robert Sedgewick 57

TELEVISION AS A COMPUTER PERIPHERAL
H. D. J. Covvey, W. Hall, A. C. Adelman, C. H. Felderhof, P. Mendler, K. W. Taylor, and E. D. Wigle 63

COMPUTER GRAPHICS TODAY
R. C. Larkin 73

REPORT OF FORMATION MEETING ON SPECIAL INTEREST GROUP IN INTERACTIVE GRAPHICS (SIGIG). 77

SIMULATION

MASTER CONTROLLER FOR AN ELECTRIC THRUST SUBSYSTEM
Henry M. Doupe' and Tad Macie 79

A PDP-8 (ISL-8) STUDY OF THE PHYSIOLOGICAL SIMULATION BENCHMARK EXPERIMENT
R. D. Benham. 87

CUT-OFF ERROR PROPAGATION IN DIGITAL SIMULATION
A. Feingold and K. G. Gupta 93

SMALL COMPUTER EXECUTIVE SYSTEMS

SEVEN"MICROS" EQUAL ONE MINI
A. Bouley, D. Carlin, I. Etter 99

HIGH SPEED SECONDARY STORAGE FOR PDP-8/I VIA MAGNETIC TAPE INTERFACE
J. T. Mercurio and R. C. Larkin 101

DIGITAL CASSETTES - A CASE HISTORY
A. Hillman and H. Wochholz 107

SMALL COMPUTER APPLICATIONS

ASSEMBLING AND PROGRAMMING A SINGLE TELEPHONE LINE COMMUNICATIONS PACKAGE FOR THE PDP-8/S COMPUTER
R. R. Plum 121

ALTERNATIVE RJE'S: TWO REMOTE JOB ENTRY TERMINAL SOFTWARE SYSTEMS
Sheridan Bentson 127

DEVELOPMENT OF A HOUSEHOLD SOFTWARE PACKAGE
Ronald A. Wong 131

YET ANOTHER PHOTOPEAK ANALYSIS PROGRAM FOR THE PDP-9 COMPUTER
Larry V. East 141

"10" AS A MANAGEMENT INFORMATION TOOL

OLIVER -- AN INTERACTIVE DATA MANAGEMENT AND INFORMATION RETRIEVAL SYSTEM
Dennis M. Moyles 147

EASYDATA - A CONVERSATIONAL MANAGEMENT INFORMATION SYSTEM FOR DECSYSTEM-10
Campbell Sayers 151

DATA ACQUISITION SYSTEMS

A STORED PROGRAM CHANNEL PROCESSOR FOR CAMAC
Robert W. Bercaw. 153

EDITDT - AN ANALOG DATA ACQUISITION, DISPLAY AND EDITING SOFTWARE SYSTEM
J. A. Miller and T. L. Drake 159

TELEMETERED PROFILING ISOTOPIC SNOW GAUGE
E. W. Killian and R. A. Coates 165

PDP-15 EXECUTIVE SYSTEMS

COMPUTER SELF-CHECKING
A. L. Connelly and G. O. English. 171

MTI. - A 9-TRACK MAGTAPE IBM/360 FILE HANDLER FOR THE PDP-9/15 ADVANCED MONITOR SYSTEM
Paul T. Ward 177

USING A PDP-15/40 AS AN AID TO DEBUGGING A LARGE REAL TIME MACHINE
Bernard J. Albanese and Irving Benyacar 181

HIGH LEVEL LANGUAGES

POP-2: A "COMPUTER SCIENTIST" LANGUAGE FOR DECSYSTEM 10
Campbell Sayers 189

WATERLOO FORTRAN FOR PDP-9/15: REPORT 2
James A. Smith and James A. Field 193

RASP
Gary M. Cole 197

FASTER FORTRAN IV ON THE PDP-11: HARDWARE FLOATING POINT
G. P. O'Leary 211

TUTORIALS

COMPUTERS INVADE SPACE (THEATRE)
Robert K. Copeland, Paul R. Beck and L. Skolnick . . 215

WORKING SESSIONS

PERIPHERAL DEVICES AND DECISION MAKING ON A SMALL COMPUTER
M.S. Cole, R. C. Davies, and G. O. English. 219

A SIMULATOR FOR THE PDP-8 POSITIVE LOGIC I/O BUS
D. Harmer, B. Statham, J. Alderman and D. McLain . 223

REPORT ON THE EDUCATION WORKSHOP 227

SPECIAL INTEREST GROUP IN EDUCATION 229

THE TRAINING OF TEACHERS IN THE USE OF COMPUTERS IN THE CLASSROOM
Pamela McGinley. 231

DIGITAL SIMULATION IN EDUCATION
Ludwig Braun 235

ASSESSMENT AS A TOOL FOR CURRICULUM DEVELOPMENT A CASE STUDY OF THE GREECE, NEW YORK, MATHEMATICS ASSESSMENT PROCESS
Daniel J. Heisey 249

THE COMPUTER IN TEACHING MATHEMATICS AND SCIENCE IN THE COMMUNITY COLLEGE
Milton H. Hoehn 257

APPENDIX

PRESENTATIONS - NO WRITTEN MATERIAL SUBMITTED FOR PUBLICATION. 259

AUTHOR/SPEAKER INDEX 261

ATTENDANCE 263

Fifth Canadian Seminar - 1971

	Page
INTRODUCTION	v
GENERAL SESSION	
Precis of Welcoming Speech given by Mr. Denzil Doyle	1
Report on the Formation of DECUS-Canada for the 5th DECUS Canadian Symposium	7
DIRECT NUMERICAL CONTROL	
Working Session chaired by E. J. Bourque	13
A Novel Approach to Numerical Control Systems by L. A. Thomas, D. K. Roberts and E. J. Bourque	15
EDUCATION I	
Working Session chaired by P.A.V. Thomas	17
Bincard and Algonquin Assembler Solve Classroom Throughput Problems by R. W. Southern	19
SPECIAL PERIPHERALS	
Working Session chaired by D. Swanson	21
12-BIT MACHINES	
INDAC-8 by D. Sheppard	23
DIAGNOSTICS	
Working Session chaired by P.A.V.Thomas	27
TEST - An Engineering Oriented Compiler by Irwin Lewis	29
18-BIT MACHINES	
Presentation by K. Vonasek	33
GRAPHICS	
Working Session chaired by D. Swanson	37
Modular Graphics Hardware? by P.A.V. Thomas	39
16-BIT MACHINES	
Working Session chaired by D. Sheppard	41
PROCESS CONTROL	
Working Session chaired by D. Sheppard	43
RSX-15 Real Time Executive for On-Line Process Control by K. Vonasek	45
EDUCATION II	
Working Session chaired by C. Copeland	47
ANALOGUE/DIGITAL CONVERSION	
Working Session chaired by C. Copeland	49
Analog to Digital Convert Interfaces for PDP-8 Computer by J. R. Saltvold	51
Digitization and Analysis of Analog signals in PDP-10/50 Time Sharing Environment by R. Chauhan and C. Forsberg	67
LIST OF ATTENDEES	71

FIRST AUSTRALIAN SEMINAR - 1971

PREFACE PAGE

DATA ACQUISITION AND CONTROL - GENERAL

THE DATA ACQUISITION AND CONTROL SYSTEM FOR THE FACULTY OF ENGINEERING, UNIVERSITY OF SYDNEY
R.H. Frater, R.E. Luxton and D.G. Wong.... 1

COMPUTER LANGUAGE FOR CONTROL ENGINEERS
R. Worthington..... 5

A REAL-TIME TOTALISATOR - HARDWARE DESCRIPTION
G. Klemmer..... 13

A REAL-TIME TOTALISATOR - SOFTWARE ANALYSIS
R. Sterndale-Smith..... 17

SNEDAC - A DATA ACQUISITION COMPUTER FOR SYSTEM MONITORING, IDENTIFICATION AND CONTROL
L. Kemeny..... 21

PDP-8 AS AN EXPERIMENTAL INTERFACE TO A LARGE COMPUTER
J.B. Millar..... 27

SMALL DIGITAL COMPUTERS FOR THE CONTROL OF MINERAL PROCESSING PLANTS
M. Lees..... 29

DATA ACQUISITION AND CONTROL - BIOMEDICAL

AUTO-ANALYSER DATA ACQUISITION SYSTEM
G.T. Bentley and M.H. Abernethy..... 33

MUDBOS - A MULTI-DEVICE BUFFERED OUTPUT SYSTEM
M.H. Abernethy and G.T. Bentley..... 39

.OMPUTERS IN PSYCHOLOGY
G. Coleman..... 43

PROCESSING TECHNIQUES

SEISMIC PROCESSING WITH A PDP-15
D.W. King..... 47

ARRAY PROCESSING WITH A FIXED-HEAD DISK
I.D.G. Macleod..... 51

AN ECONOMICAL DECISION TABLE SUBROUTINE FOR PDP-8 ASSEMBLY LANGUAGE PROGRAMS
J.C. Cockram..... 55

STUDIES OF IONIC SOLUTION EQUILIBRIA
H. Kinns and D.D. Perrin..... 59

PAGE

OFF-LINE APPLICATION OF A PDP-8/S COMPUTER TO X-RAY FLUORESCENCE ANALYSIS
R.A. Davies..... 61

THE USE OF A PDP-8/I IN TEACHING FORESTRY STUDENTS AT THE UNIVERSITY OF CANTERBURY
A.D.G. Whyte..... 65

SYSTEM SOFTWARE

SYSTEM SOFTWARE DEVELOPED AT A.R.L. FOR THE PDP-10
L.H. Mitchell..... 69

IMPLICATIONS OF A NEW COMMAND STRUCTURE
R.A. Cook..... 71

ERROR REPORTING SYSTEM FOR THE I/O DEVICES ON THE PDP-10
D.J. Seddon..... 79

A GENERALISED SOFTWARE SYSTEM FOR IMPROVED CORE UTILISATION FOR PDP-8 COMPUTERS
F. Lewin..... 83

AN IMPROVED CHAINING SYSTEM FOR THE PDP-9
J. Edwards..... 87

THE DEVELOPMENT OF A TIME-SHARING MONITOR FOR AN 8K PDP-9
P.R.A. Rutter..... 91

COMPUTING UTILITIES

SOME ASPECTS OF THE USE OF A PDP-10 INSTALLATION IN A SMALL UNIVERSITY
I.M. Hunter..... 95

THE DEVELOPMENT OF INTERACTIVE TEACHING AIDS A PROBLEM ORIENTED LANGUAGE FOR HYDRAULICS AND C.A.I. FOR ENGINEERING ECONOMICS
K.P. Stark..... 107

SOME ASPECTS OF REAL-TIME INFORMATION SYSTEMS FOR LIBRARIES, BASED ON TIME-SHARING COMPUTERS
D.J. Abel..... 115

THE CSIRO COMPUTING NETWORK
T.S. Holden and J.E. Paine..... 119

INTERFACING PDP-11S TO CONTROL DATA COMPUTERS
C. Gilbert..... 123

APPENDIX

AUTHOR/PAPER INDEX..... 129

ATTENDANCE..... 130

7TH EUROPEAN SEMINAR - 1971

Page

PREFACE v

AUTHOR/SPEAKER INDEX vii

CONTRASTS IN MINICOMPUTER USE

A HEURISTIC, LEARNING PROGRAMME FOR THE DIRECT CONTROL OF A PLANT
S. Assilian 1

EXPERIMENTAL TELEPHONE INQUIRY SYSTEM
J. B. de Jong 5

A COMPUTER BASED TEST SYSTEM FOR ELECTRONIC COMPONENTS AND MODULES
A. Sclater 9

AUTOMATED PSYCHOLOGICAL TESTS; KEY CONCEPTS ADVANTAGES AND LIMITATIONS
A. Elithorn, J. James 15

PDP-9/15 WORKSHOP

DECTAPE SOFTWARE FOR A PDP-7
R. J. Cowe 25

PDP-15/30 UTILITIES
M. J. Davey 29

A MULTIPROGRAMMING OPERATING SYSTEM FOR THE PDP-9
I. H. Gould, P. L. Higginson 31

SOFTWARE DEVELOPMENTS FOR SMALL COMPUTERS
H. Christen, P. A. Staub 37

PDP-8 WORKSHOP

FILE-HANDLING SYSTEM FOR GENERAL LABORATORY WORK
C. Reutersward 43

INVISIBLE ODT WITH TRACING FACILITIES
B. Runge, J. V. Olsen 49

PDP-10 WORKSHOP

ORGANIZATION OF THE BEA PDP-10
T. Ashby 53

AN ALTERNATIVE USE OF PDP-10 RE-ENTRANT HARDWARE
C. J. B. Hawkins 57

STATISTICAL DATA ON THE PDP-10 MONITOR PERFORMANCE
E. Ziegler, K. Boll 61

UTILITIES

RUBBER MATERIALS BLENDING AND MIXING SYSTEM
A. Luffman 67

Page

BLUTALKOHOL ANALYSE MIT DIREKTER COMPUTER AUSWERTUNG (COMPUTERIZED BLOOD ALCOHOL ANALYSIS)
H. J. Battista 73

ON-LINE IDENTIFICATION OF A PACKED DISTILLATION COLUMN USING A DIGITAL PDP-12 COMPUTER
A. Palmer, J. D. Boyle 77

SOFTWARE AND HARDWARE FOR A DEC PDP-15 OR PDP-9 COMPUTER TO ENABLE THE VP 15A CRT TO BE USED WITH REFRESH POINTS AND ALSO IN AN INTERACTIVE MODE
S. B. M. Bell 83

GRAPHICS AND THE SMALL COMPUTER
M. H. Choudhury 91

A MODEL OF A SYSTEM FOR RETRANSMISSION OF MULTI ADDRESS MESSAGES
W. R M. Kok 97

PDP-12 WORKSHOP

A FLEXIBLE INTERACTIVE - DISPLAY GENERATING SUBROUTINE FOR THE PDP-12 OR LINC-8
C. M. Malpus 101

SIGNAL PROCESSING

A HANDLER FOR COLLECTING TIME DEPENDANT DATA
H. P. Hougardy 107

VARIOUS ALGORITHMS FOR STORAGE OF RANDOM EVENTS IN A REAL-TIME SYSTEM
C. Zeelenberg, A. C. Miller, W. A. H. Engelse . . . 109

AUTOMATIC ON-LINE ANALYSIS OF ELECTROMYIOGRAPHIC DATA WITH A PDP-12 COMPUTER
J. Bergmans 115

MEASURING IMPLUSE RESPONSES USING PSEUDO-RANDOM BINARY NOISE AND CROSS CORRELATION
H. L. Steinberg 119

THE FAST FOURIER TRANSFORM AND ITS USE
H. R. de Jongh, E. de Boer 123

MULTICHANNEL ON-LINE FAST FOURIER ANALYSIS
P.V. Pocock, R. Cooper, W. J. Warren 133

DATA COLLECTION

THE DISPLAY OF PLANAR VECTORCARDIOGRAMS AND THE CALCULATION OF PLANAR VECTOR ANGLES AND MAGNITUDES IN THE HORSE
J. R. Holmes 141

A SYSTEM FOR DATA GATHERING AND HANDLING IN NEUROPHYSIOLOGY
F.H. Bostem. 145

AN INTERACTIVE COMMUNICATION SYSTEM FOR AN INTENSIVE CARE UNIT
A.C. Miller, W.A.H. Engelse, C.Stillbraer. 155

USING A TRANSIENT RECORDER WITH A LINC-8/PDP-8
C.C. Wilton-Davies 161

DATA ACQUISITION IN THE FIELD OF FLUID DYNAMICS BY A PDP-15/20 WITH DISK PACK MASS STORAGE
E. von Koening, W. Kraemer. 165

RECORDING WITH A TV-CAMERA INTO THE PDP-8'S CORE MEMORY
E. Froeschle, H. Sotta, K.H. Rackette. 169

A GLC-QUARUPOLE MASS SPECTROMETER - PDP-8/I
R. Hallett, J Farren 175

ON-LINE PLASMA DIAGNOSTICS AT MHD GENERATOR VEGAS USING LAB-8
P. Schabel, Chr. Holzapfel, K. Rawatsch 179

NUCLEAR PHYSICS WORKSHOP

A PDP-8 CONTROLLED SERVO-DRIVE FOR MEASURING MACHINES
M.L. Retter, M.Flinn. 187

AN ON-LINE DIGITAL CORRELATOR USING A MINI-COMPUTER
J. G. Carruthers 193

MULTICHANNEL ANALYZING PROGRAMS FOR A PDP-8/L
J. Renuart, Y. Longree 199

A PDP-11 MULTICHANNEL-ANALYZER SYSTEM WITH REAL-TIME DATA ANALYSIS FOR TEMPERATURE CONTROL BY NUCLEAR MEANS
R. E. Silverans, L. Vanneste, E. Vermeulen 203

LANGUAGES AND COMMAND INTERPRETERS

A COMMAND LANGUAGE FOR PULSE HEIGHT ANALYSIS
T. Schulze, T. Schlurick, H. J. Trebst. 209

CALCPLOT: A CONVERSATIONAL LANGUAGE FOR THE LINC-8 AND PDP-12 FOR STATISTICAL CALCULATIONS AND GRAPH PLOTTING
H. Bostock 213

IMPLEMENTATION OF BCPL ON THE PDP-10
B. O'Mahoney 217

STANDARDIZATION OF BASIC
G. M. Bull 221

MULTISYSTEMS

DESIGN AND IMPLEMENTATION OF 800 KILOBIT/SEC. DATA LINKS BETWEEN REMOTE SMALL COMPUTERS AND A CENTRAL PDP-8 MESSAGE CONCENTRATING SYSTEM
G. Phillips, D. Harvey. 223

IMPLEMENTATION OF A PDP-15 DUAL COMPUTER SYSTEM
C. Corge 231

CORE SHARING FACILITIES ON A PDP-6/PDP-10 DUAL PROCESSOR SYSTEM
T. P. Kokott 235

AN ON-LINE HIGH SPEED COMPUTER LINK
I. G. Dewis 239

THE LINKED PDP-10/ICL1900 COMPUTER CONFIGURATION AT THE UNIVERSITY OF ESSEX
B. O'Mahoney 247

THE ADVANTAGES OF A SINGLE BI-DIRECTIONAL HIGHWAY (UNIBUS) IN A PERIPHERAL PRE-PROCESSOR
A. W. Nicholson. 251

PDP-11 WORKSHOP

BLISS-11: AM IMPLEMENTATION LANGUAGE FOR THE PDP-11
R. F. Brender. 255

SPRING 1972

PAGE

Preface vii

MAINFRAME INTERFACING PROJECTS

FIVE YEARS OF COMPUTER INTERFACING (AND SOME OF THE PROBLEMS ENCOUNTERED)
E. R. Fisher, A.M. Kray, J. W. Frazer.... 1

AN INTERFACE TO CONNECT AN IBM-1401 FAST I/O PROCESSOR TO PDP-8 FAMILY COMPUTERS
J. D. Steben, R. L. Bennett..... 9

HARDWARE MODIFICATIONS TO PDP-9
Z.S. Basinski, H.G. Champion, M.S. Duesbery..... 17

UPDATING THE CLASSIC LINC
W. L. Hardy..... 21

NORTHWESTERN'S MINI-COMPUTER RESEARCH NETWORK
W.J. Lennon, R.C. Barrett, J. T. Spies... 25

LABORATORY APPLICATION REPORTS

THE MARINER MARS SPECTRUM EDITOR SYSTEM
D.M. Stern, M.L. Dick, P.L. Evans..... 37

ANALOG DETECTION OF MASS SPECTROMETER PEAKS IN A MULTI-USER COMPUTER SYSTEM
C.L. Pomernacki..... 45

PROGRAMS FOR MOLECULAR STRUCTURE AND X-RAY CRYSTALLOGRAPHY
L.K. Steinrauf..... 49

COMPUTER ANALYSIS OF HIGH RESOLUTION X-RAY DATA
D.R. Donati, A.Liuzzi, S.C. Mathur..... 53

DATA-BASED METHODS FOR MINICOMPUTER PROCESS CONTROL
R.P.Jefferis..... 57

TIICIE: A TIMED INTERPRETIVE CONTROL OF INDEPENDENT EXPERIMENTS
H.L. Dyckman..... 61

EVENT DETECTION: A METHOD FOR ON-LINE ANALYSIS OF NEUROPHYSIOLOGICAL SIGNALS
D.J. Solonche,R. Beschle, D. Eteson..... 67

EEG SPECTRAL ANALYSIS IN REAL TIME
A.S. Gevins, C.L. Yeager..... 71

GRAPHIC TECHNIQUES

PDP-8 GRAPHICS ON A STORAGE DISPLAY SCOPE
D.C. Uber..... 81

INTERACTIVE DIGITIZING
R. Steel..... 87

A REAL-TIME DATA COLLECTION SYSTEM FROM TEN ON-LINE STATIONS
M. Stern..... 93

PAGE

INTERACTIVE DATA DISPLAY SYSTEM
H.G. Bown, C.D. O'Brien..... 97

IMPROVED ROUTINES FOR THE PDP-15/VT-15
L.Leiro, R. Taylor..... 105

USER-ORIENTED COMPUTER GRAPHIC SYSTEM
K. Lee..... 109

PROGRAMMING CONCEPTS

APPLICATIONS OF A STRING LANGUAGE
A. E. Sapega, M.N. Simon, A.B. Martinez. 113

HIGHLIGHTS OF THE AMBIT/L PROGRAMMING SYSTEM
M. S. Wolfberg..... 117

SOURCE-DESTINATION (A MODULAR PROGRAMMING CONCEPT)
M.J. Allen..... 129

A SORT/MERGE FOR THE PDP-11
E.L. Walter, W.E. Hammond..... 141

HARDWARE-SOFTWARE TRADEOFFS

ON COMPRESSING CARD DATA INTO BYTES
R. Krishna..... 147

FOREGROUND/BACKGROUND/8 SYSTEM WITH EXPANDED TRAP
N.S. Kendrick..... 153

PROGRAM LP: A LINE PRINTER EMULATOR FOR THE PDP-11/20 - GOULD 4800-11
M. Clifton, M. Pleck, R. Ruhl..... 163

SOFTWARE FOR THE PDP-9/15 FAMILY

SOFTWARE MODIFICATIONS TO PDP-9
Z.S. Basinski, H.G. Champion, M.S. Duesbery..... 169

ADD A 200 LOCATION MULTI-TASK MONITOR TO YOUR PDP-9/15
B.C. Smith..... 173

INTERACTIVE LANGUAGES IN A REAL-TIME ENVIRONMENT

AUTOMATED TERMINAL USAGE ACCOUNTING FOR FOUR-USER FOCAL
G.C. Moore, L.S. McGimsey, C.L. Davis... 179

SPASTIC - A SYSTEM FOR PROGRAMMING ANGLES, SCALER, AND TIMER BY INTERNAL COUNTING
C.R. Desper, T. F. Quatieri..... 183

FOCAL USED IN A DATA ACQUISITION AND CONTROL SYSTEM-ADVANTAGES AND DISADVANTAGES
J.C. English..... 191

USING FOCAL IN RESEARCH
W.Siegel, K. Whittle..... 195

PAGE

USING BASIC AS A REAL TIME EXECUTIVE ON A SMALL SYSTEM
B. Stiefeld..... 203

PSYCBL - A FOCAL BASED SYSTEM FOR REAL TIME CONTROL OF EXPERIMENTS
L.D. Braida, P.W. Herman, D.J. Callahan. 207

STATPAC-12, A PACKAGE OF EDUCATIONAL AND UTILITY PROGRAMS FOR STATISTICS, DATA REDUCATION AND ERROR ANALYSIS
D.Y. Pitts, S. Hobbs, D.S. Harmer..... 209

FOCL/F-- AN EXTENDED VERSION OF 8K FOCAL/69
D.E. Wrege, D.S. Harmer..... 213

CURRENT DEVELOPMENTS IN THE MULTI USER BASIC SYSTEM FOR THE PDP-11

A COMPREHENSIVE DIGITAL-COMPUTER ANALYSIS FOR FOUR-BAR LINKAGES
J.A. Newman, D.J. Gorman, R. Sharma..... 221

ONE OF A KIND PROGRAMS

CAP98 - A CROSS ASSEMBLER FOR THE DEC PDP-8
J.R. Cseh, D.J. Ewing..... 227

EXPERIMENTAL SOCIOLOGICAL INVESTIGATION WITH A SMALL COMPUTER
W.L. Hardy..... 231

USE OF A PDP-8/L TO TRAIN RATS
N.S.Kendrick..... 233

PERIPHERALS

THE DEVELOPMENT OF A SMALL GRAPHIC TERMINAL
L. F. Halio..... 245

A LOW-COST MULTI-USER REMOTE LINE PRINTER INTERFACE
J.D. Breshears..... 251

INTERPROCESSING TECHNIQUES

INTERCONNECTED COMPUTERS AT KAPL
J.A. Brookings..... 255

PS-8 PROGRAMMING SYSTEM FOR THE PDP-8 FAMILY

8TRAN: AN OVERVIEW OF THE LANGUAGE
R.A. Helwig, A.Coston..... 261

INTERRUPT-DRIVEN PS-8 DEVICE HANDLERS
G.N. McAllen..... 269

THE SMALL COMPUTER IN A MULTI USER ENVIRONMENT

PROGRAM-PRODUCTION TIME-SHARING SYSTEM
S.G. Davis..... 273

PAGE

MTS-12: A MULTI-LANGUAGE, TIME-SHARING SYSTEM FOR PDP-12 COMPUTERS
C.S. Tidball, J.E. Crawford, B.B. Bon.. 277

TUCOS-8
R.A. Hoffman..... 287

HOW TO TIME SHARE AN 18-BIT PROCESSOR AMONG 16 USERS WITH ONLY 8K OF CORE
A.M. Kray, E.R. Fisher, J. W. Frazer... 291

A PROGRAMMING SYSTEM FOR THE TIME-SHARED MINICOMPUTER
C. Knouse..... 297

A TIMESHARED OPERATING SYSTEM FOR THE PDP-11
E. L. Walter, A. Brantley, S. Feagin, W. E. Hammond..... 303

A REAL-TIME MULTI-USER MONITOR SYSTEM FOR THE PDP-8 FAMILY OF COMPUTERS
R. Sage, D. Loving..... 309

A MINIATURE TIME - SHARED MONITOR
W.L. Craft, H. E. Dayringer..... 315

MTM/8-MULTI-TASK REAL-TIME MONITOR FOR THE PDP-8 SERIES COMPUTER
M.J. Smith..... 317

COMPUTER AIDED EDUCATION PROJECTS

TSS/8--PDP-10 LINK FOR CAI USE
J.D. Dinniwell, J. Luts..... 319

THE TEACHER LISTENS-TO HER PDP-8
A.L. Brown..... 327

PDP-11 INTERFACING

A MICROPROGRAMMED BRANCH DRIVER FOR A PDP-11 COMPUTER
L.R. Biswell..... 333

BIOMEDICAL APPLICATIONS

A MANAGEMENT REPORT SYSTEM
W.E. Hammond..... 341

PROGRAMMING EXPERIENCE ON THE EXPANDED USE OF THE COMPUTER SOFTWARE SYSTEM IN A HOSPITAL CLINICAL LABORATORY
S. Shastri, A. W. Sami, M.Bright, E. Wagman..... 349

MASSAGE OF GEMISCH
W.W. Stead, W. E. Hammond..... 351

THE PHYSICIAN COMPUTER INTERFACE
S.C. Lloyd, W.E. Hammond..... 355

DEBUGGING TECHNIQUES

RAUPEDATA-11 - A SOPHISTICATED DEBUGGING PROGRAM FOR THE PDP-11
E. G. Fisher..... 361

FALL 1972

Page

PREFACE v

LUNCHEON ADDRESS - "AN ANALOG LOOK AT COMPUTER JARGON"
Leo J. Chamberlain 1

INSTRUMENTED LABORATORY APPLICATIONS

PDP-12 PROCESSING OF LINK FLIGHT SIMULATOR DATA
H. N. Keiser and P. H. Henry 3

A DATA ACQUISITION AND DECCOMMUTATION SYSTEM
E. T. Tognola 9

CARDIOLOGY APPLICATIONS

COMPUTATION OF CARDIAC OUTPUT USING DYE DILUTION TECHNICS IN REAL TIME ON A PDP-12
E. L. Fitzpatrick 17

DEVELOPING MINICOMPUTER SOFTWARE ON LARGE COMPUTERS

USE OF A LARGE PROCESSOR TO DEVELOP REAL-TIME FORTRAN SOURCE PROGRAMS FOR DEDICATED MINI-COMPUTERS
J. K. Upchurch and J. W. White 21

MODULAR PROGRAMMING TECHNIQUES

DSP8 A DIAGNOSTIC SUPPORT PACKAGE FOR PDP-8 FAMILY COMPUTERS
John C. Alderman 33

MODULAR PROGRAMMING TECHNIQUES
R. Krones. 49

PHYSIOLOGICAL WAVEFORMS

A COMPUTER METHOD FOR DESCRIBING SPATIAL AND TEMPORAL DISPERSION OF NERVE ACTION POTENTIALS
W. S. Seibly and T. J. Willey. 55

A REALISTIC APPROACH TO DETERMINING CLINICALLY USEFUL FEATURES OF THE EEG
D. R. Skuce, J. Gotman and C. J. Thompson 59

ON-LINE CLASSIFICATION OF NEUROPHYSIOLOGICAL WAVEFORMS
R. M. Harper, D. O. Walter and D. S. Kelly 65

A SET OF PDP-12 PROGRAMS FOR COMPUTING SPECTRA OF POWER, COHERENCE, AND PHASE
Cyril H. Nute 71

FOCAL TOPICS

A FOCAL PROGRAMMING SYSTEM FOR AN ISOTOPE RATIO MASS SPECTROMETER LABORATORY
L. C. Nelson. 77

SYSTEM DESIGN CONSIDERATIONS

INTERFACING THE LABORATORY COMPUTER TO THE USER
R. Krones. 81

Page

LANGUAGE DEVELOPMENTS FOR THE PDP-8 AND PDP-12

PAL12: A BILINGUAL ASSEMBLER FOR THE PDP-12
C. G. Roby and D. J. Duffy 85

SCROLL: A SCROLLING EDITOR FOR OS/8 DESIGN CONCEPTS AND CONSIDERATIONS
D. J. Duffy 97

AN OS/8 SKED SOFTWARE SYSTEM
M. F. Lewis and P. Savage 103

SYSTEM SUPPORT FOR TRADITIONAL PRODUCTS
T. W. McIntyre 105

ONE-OF-A-KIND PRESENTATIONS

INVESTIGATION OF TESSELLATION AUTOMATA WITH A PDP-8/I TYPE 338 DISPLAY SYSTEM
Stanley H. Levine 107

HYBRID I - A COMPUTER CONTROLLED MUSICAL INSTRUMENT
J. E. Mack and E. G. Kobrin 113

DESIRABLE FEATURES FOR A PSYCHIATRIC INFORMATION SYSTEM FOR A LINC-8
M. R. Eastwood, R. Sadana and G. Whiting 119

COMPUTERS IN EDUCATION

ON-LINE ENROLLMENT FOR A SMALL COLLEGE USING THE PDP-11
R. A. Branton 125

GRAPHIC GAMES FOR PHYSICS INSTRUCTION
Burton N. Kendall 127

A PROGRAM TO TEACH MEDICAL COMPUTING APPLICATIONS TO MEDICAL STUDENTS
J. Hamilton, M. Pinkerton and L. K. Steinrauf 129

MISS - A FOCAL-8/LIBRA DATA ANALYSIS SYSTEM FOR INSTRUCTION & RESEARCH
R. E. Anderson and J. Gross 133

MULTIPROCESSOR SYSTEMS

THE IBM 360/50 AS A PDP-8/I PERIPHERAL
R. N. Stillwell 139

LDP PRODUCT PANEL

THE PDP-11 FAMILY
Digital Equipment Corporation 143

REAL TIME TECHNIQUES

SIMPLIFIED DYNAMIC DATA MEASUREMENTS USING A UNIQUE HARDWARE/SOFTWARE APPROACH
L.W. Catlin, R.A. Seeman and D.L. Serres 149

INTERFACE OF A DEC PDP-12 DIGITAL COMPUTER AND AN EAI 680 ANALOG COMPUTER WITH A CARDIOVASCULAR LABORATORY LOCATED OVER 1000 FEET AWAY
E. Engelken 157

Page

REAL TIME EXECUTIVE DESIGN IN SIGNAL PROCESSING SYSTEMS
A S. Gevins 165

PERIPHERALS

A MINICOMPUTER PHOTOELECTRIC TAPE READER DESIGN
R.A. Dell 173

CASSETTE EMULATES DECTAPE UNDER PDP-11 DOS
E.L. Pavia 177

A LOW-COST, MULTI-TERMINAL DATA ENTRY AND RETRIEVAL SYSTEM
W.K. Smith 185

GRAPHICS AND PRINTERS
R. Anundson 191

HARDWARE ADD-ONS

RANDOM ACCESS SEVEN-TRACK MAGNETIC TAPE FOR OS/8 USERS
V.Elischer and J. E. Katz 193

APPENDIX

PRESENTATIONS - NO WRITTEN MATERIAL SUBMITTED FOR PUBLICATION 209

AUTHOR/SPEAKER INDEX 211

ATTENDANCE 213

EIGHTH EUROPEAN SEMINAR - 1972

Page

AUTHOR CROSS-REFERENCE INDEX* iv

PREFACE v

KEYNOTE ADDRESS
G. Monsonego 1

BEA'S DECSYSTEM10 NELIAC PROGRAMMING SYSTEM
T. Ashby 3

AN INNOVATION WITHIN DATA PROCESSING
J. R. Atkinson 7

AID TO DIAGNOSIS
R. Beelen 9

A HIGH PERFORMANCE PDP-10/PDP-11 LINK
J. Bettels, D.A. Jacobs, D.O. Williams 15

PS-8 ANALYSIS SYSTEMS OF EVOKED POTENTIALS
J. L. Blom 21

POOR MAN'S MULTIPROGRAMMING, A SIMPLE MULTIPROGRAMMING SYSTEM FOR THE PDP-9/15
E. de Boer 25

DATA ACQUISITION FROM A GRAPHIC READING UNIT
J. Boulc'h 31

THE PDP-11 COMPUTER IN RESEARCH ON THE FUNCTION OF THE HEART
W. W. Braet, P.J. Lewi, R. Nuyens 33

AUTOMATIZATION OF A STUDENT-LABORATORY IN A PSYCHOLOGY DEPARTMENT
J. J. Breimer, M.J. v.d. Stelt 37

AN ON-LINE SUPERVISOR FOR THE PDP-11
Ch. Broesamle 43

THE IMPLEMENTATION OF MACHINE-INDEPENDENT SOFTWARE USING A MACRO PROCESSOR
P.J. Brown, R.C. Saunders 49

A MULTITASKING OPERATING SYSTEM ON A PDP-8 - A BASIS FOR INTELLIGENT WORK IN DIFFERENT APPLICATION AREAS
K. Brunnstein, J. W. Schmidt 53

APPLICATION OF A DUAL PDP-11 SYSTEM IN AN EXPERIMENTAL SATELLITE EARTH STATION
G. Brussaard, A. da Silva Curiel 57

DESIGN OF AN EDUCATIONAL COMPUTER BASED ON A PDP-11
G. M. Bull 63

A PDP-15 SIMULATOR FOR A PDP-10
R. G. Bushell 67

GRAF: A DISPLAY PROGRAMMING LANGUAGE
S. Cerutti, F. Chiusa, R. Continenza 71

AN INCREMENTAL LIST PROCESSING LANGUAGE
C. C. Charlton, P. G. Hibbard 77

COMPUTER AIDED INSPECTION
M.H. Choudhury, C.D.C. Finlayson, J.Y. Alexander 83

A PDP-10 (TOPS-10) DEVICE HANDLER FOR A PDP-7/340 SATELLITE DISPLAY PROCESSOR
R.J. Cowe 89

IMPLEMENTATION OF CAMAC ON A MULTI-USER PDP-10/PDP-7 SYSTEM A HIGH LEVEL USER LANGUAGE
M.P.H. Davies, P.J. Hagan 93

THE USE OF A SMALL COMPUTER IN COMPUTER SCIENCE TEACHING
H. Dewar 97

RESPONSE DEPENDENT ANALYSIS IN PHYSIOLOGICAL PSYCHOLOGY CEREBRAL DOMINANCE AND INTER-CEREBRAL TRANSFER
A. Elithorn, J. Jones, A.Telford 101

SENSITIVITY ENHANCEMENT IN NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY USING A PDP-12 COMPUTER
A. Emmett, P.J.S. Pauwels, P.T. Priestly 107

A HIGH SPEED LINK FOR COMPUTER ANIMATION
G.A. England 109

A HARDWARE LOADER FOR THE PDP-8
M. Flinn 113

PULSE HEIGHT ANALYSIS SOFTWARE FOR SLOW-FAST-COINCIDENCE EXPERIMENTS
J. Franz, H.J. Urban 117

INDUSTRIAL CLINICAL - LABORATORY AUTOMATION
M.G. Gallagher 123

A PLANT SEQUENCE CONTROL PACKAGE FOR THE PDP-8
D. Gare, D. Bradley 131

FLEXIBLE COMMUNICATIONS SOFTWARE USING A PDP-11
M. J. Garside, S.E. Binns 137

A MULTI TELETYPE HANDLER FOR THE PDP-8/E
W. Guas 141

WRITING PROGRAMS BY SPEECH
W. D. Gilmour 145

SEGMENTATION AND DYNAMIC LOADING IN THE PDP-9
I. H. Gould 151

HYBRID FOCAL - FOCALH FOR PDP-15/EAL 693/EAL 680
A.W.J. Griffin 155

HSYSØ4: A DISK PACK OPERATING SYSTEM FOR AN 8K PDP-15
P. Habermann, E. von Koenig 159

IMPLEMENTATION OF CAMAC ON A MULTI-USER PDP-10/PDP-7 SYSTEM - SYSTEM SOFTWARE
P.J. Hagan, M.P.H. Davies 165

A MULTI-CHANNEL DATA-LOGGING SYSTEM
G. Hall 169

A GRAPHIC SOFTWARE SYSTEM FOR THE PDP-11 (%GSS-11)
P.H. Heinrich 175

TELECOMMUNICATIONS SOFTWARE FOR A MULTI-PROGRAMMED PDP-9
P.L. Higginson 179

A SET OF MACRO 15 SUBROUTINES FOR THE PDP-15
M. Hofmann, R. Lutter, F. Riess 183

PROGRAMMING METHODS FOR THE MEASUREMENT, STORAGE, DISPLAY, PRINTOUT AND PLOTTING OF HEART BEAT INTERVALS
J. R. Holmes 185

A GENERALIZED PDP-15 MAGNETIC TAPE DATA STRUCTURE FOR DIGITIZED ANALOG DATA
J.J.W. Hoos, J.P.Porzak, W.T. Thijssen 191

A MULTICOMPUTER INTERFACE TO CAMAC
R. Hunt, B.E.F. Macefield 197

LABORATORY ON LINE, DATATRANSMISSION
R. Jaeken 201

AIDA, AN OPERATING SYSTEM FOR THE PDP-8 - II. HARDWARE ASPECTS
P.U. ten Kate, E. Kwakkel 205

A CONVERSATIONAL PROGRAM FOR THE DESIGN OF DIGITAL FILTERS
E. H. Kirk 209

ADAPTIVE CONTROL OF DYNAMIC FATIQUE TESTING MACHINES VIA PROCESS COMPUTER
M. Kirschstein, W. Aicher, M. Mueller 215

AN ON-LINE ELECTROCARDIOGRAM FEEDBACK AND ANALYSIS PROGRAM
M.M. Kohn 217

FOCAL - AN EASY WAY TO REAL TIME
M. Kongas 223

AN ADC CONTROLLER FOR THE PDP-15
S. Kossionides, V. Katselis 225

LOW COST PLOTTING WITH AN X-Y RECORDER
W. Kraemer, P. Habermann 229

SIMUL: A PROGRAM FOR DIGITAL AND HYBRID SIMULATION
H. Lecocq 233

A VERSATILE INTERCONNECTION OF FOUR SPECTROMETERS TO A PDP-11 COMPUTER
Y. Lefebvre, A. Axmann 239

PAL (PEDAGOGIC ALGORITHMIC LANGUAGE)
J.D. Lennox 243

ACQUISITION ET TRAITEMENT EN TEMPS REEL DE DONNEES SPECTROSCOPIQUES ULTRA RAPIDES
P. Levoir, R.H. Donnay, J.C. Fontaine, F. Garnier, J.E. Dubois 245

USE OF PDP-15 IN DESIGN TOOL SIMULATORS
G. Lindgren 249

A SIMPLE ASYNCHRONOUS INTERFACE FOR LINKING SMALL COMPUTERS
R. J. Lindsay 253

COMPUTER DRIVEN ANIMATION ON A GRAPHIC DISPLAY
M. Lucas 257

CONTROL OF COMPUTER RESOURCES IN A DECSYSTEM10
B. O'Mahoney, D.A. Clayton, I.R. MacCallum . . . 261

SYGNA - A COMPLETE SOFTWARE SYSTEM FOR GENERAL NETWORK ANALYSIS USING INTERACTIVE COMPUTER GRAPHICS
N. Marovac 263

AIDA, AN OPERATING SYSTEM FOR THE PDP-8 - I. SOFTWARE ASPECTS
A.J. Mars, J.L. Visschers, R.F. van Wijk 269

THE SOFTWARE FOR THE CONCORDE MAJOR FATIQUE TEST
K. I. McKenzie, R.C. Hart 277

THE COMPOSITION TECHNOLOGY BOOK COMPOSITION SYSTEM
R. J. McQuillin 283

THE PS8 PROGRAMMING SYSTEM IN A FOREGROUND/BACKGROUND ENVIRONMENT
J.R. Mees, J.F. Anthoni 301

UPDATE, A PROGRAM FOR OFF-LINE CORRECTION OF PS8 FILES, CONTAINING VARIABLE-LENGTH ALPHA NUMERIC RECORDS
J. R. Mees, J.F.Anthoni 303

FILE SECURITY WITHOUT MAGNETIC TAPES ON DECSYSTEM-10
C. Mitchell, J.J.J. Holmes 305

A UNIVERSAL POINT PLOT OSCILLOSCOPE DISPLAY CONTROL FOR THE PDP-8/E
L.H. van Montfort, J.van der Zee, L. de Pater . . . 309

MODIFICATIONS TO A DR11A IMPROVE THE CONTROL OF DATA TRANSFERS BETWEEN A MAGNETIC TAPE CASSETTE-UNIT AND A PDP-11
A.W. Nicholson 313

THE USE OF A MINICOMPUTER IN AN INTEGRATED SEMI-AUTOMATIC RADIATION FILM BADGE DENSITOMETER
I.H. Patterson 319

CORRELATION TECHNIQUES AND PATTERN RECOGNITION USING A PDP-12
P.V. Pocock, R. Cooper, H. Weinberg 323

PDP-15 RSX IN A MULTI-USER ENVIRONMENT
J.P. Porzak, C. Timmer 327

INTERRUPTOR
J. De Raedt. 333

ANALYSIS OF MULTICHANNEL PULSE HEIGHT ANALYZER DATA WITH A VP-15 STORAGE DISPLAY
F. Riess, J. Brand, R.L. Hershberger, R. Lutter 337

MACHINE INTELLIGENCE IN FAST TRACK FOLLOWING PDP-15 DIRECTED REALTIME PROCESS SYSTEM
E. Riipinen 341

AN INFORMATION RETRIEVAL AND ANALYSIS SYSTEM FOR HIGH-SPEED (300m.p.h.) GROUND TRANSPORT RESEARCH TEST VEHICLES
N.W. Sandland. 343

338-DISPLAY SYSTEM
L. Saunders 351

AIMS-11 - A COMMERCIALLY ORIENTED, MULTI-USER SYSTEM FOR THE PDP-11
D.E. Schilling 357

THE IMPLEMENTATION OF A CAMAC OPERATING SYSTEM
T. Schlurick 361

RTI-70 AN OPERATING SYSTEM FOR REAL TIME CONTROL BASED ON FOCAL (WITH COMPREHENSIVE DISK BASED PROGRAMME LIBRARY FACILITIES)
W.A. Smith, P. Adams. 365

A GAUSSIAN STOCHASTIC GENERATOR
P. R. Smith. 367

THE ANALYSIS OF MIXTURES USING A GAS CHROMATOGRAPH/MASS SPECTROMETER WITH A PDP-8/I FOR PLOTTING ION ABUNDANCE VERSUS TIME
C.J. Thompson, C.N. Goode 373

INTERFACING TWO NOMINALLY INCOMPATIBLE COMPUTERS
P. R. Thrift. 375

AUTOMATIC CODING FROM A FLOW DIAGRAM
A.C. Tory, P. Maycock, R. N. Wintle 381

PRE-TEST VALIDATION AND OPTIMISATION TECHNIQUES FOR A 'SOFT-WIRE' TELEMETRY SYSTEM USED FOR HIGH-SPEED (300 m.p.h.) GROUND TRANSPORT RESEARCH TEST VEHICLES
R. Trinder 385

MAGTAPE CONTROL UNIT FOR PDP-8/L
E.Vermeulen, J.De Raedt, H. Van de Voorde 391

A PDP-11 DUAL MULTICHANNEL-ANALYZER SYSTEM WITH REAL-TIME DATA ANALYSIS
E. Vermeulen, R.E. Silverans, E. Schoeters, L. Vanneste 395

BIO-MEDICAL ON-LINE SUPERVISORY SYSTEM
B. Versteeg, J.S. Duisterhout 397

REAL-TIME SYSTEM FOR INDUSTRIAL APPLICATION
E.F. Wessner 401

MINIMIZING TRAFFIC BETWEEN TWO PROCESSORS USED FOR INTERACTIVE GRAPHIC
J. Wexler. 407

COGAP: A COMPREHENSIVE GRAPHICS APPLICATION PACKAGE
A.D. Wilkinson. 413

A MULTI-PURPOSE COMPUTER NETWORK
A.D. Wilkinson, J. McGill, G.I. Crawford. . . . 415

A COMPUTER CONTROLLED APPARATUS FOR MECHANICAL TESTING OF SOILS
D.M. Wood 419

MINUTES OF LUG COORDINATORS MEETING . . 425

ATTENDANCE LIST. 427

SECOND AUSTRALIAN SEMINAR - 1972

CONTROL

REAL-TIME TRACKING, LOGGING AND OPERATOR GUIDANCE IN A PLATE MILL (PDP-8/I)
J.P. Watkin 1

SOFTWARE FOR PRODUCTION MONITORING AND DATA ACQUISITION, APPLIED IN A PLATE MILL (PDP-8/I)
D.M. Ballantine and J.P. Watkin 7

A PDP-11/20 EXECUTIVE PROGRAM WITH LOW CORE REQUIREMENTS FOR COMPUTER CONTROL APPLICATIONS
B.R. Lawrence and D.J. Mercer 13

AN ACCURATE METHOD FOR THE POSITIONING OF THE 2-THETA MOVEMENT OF AN X-RAY SPECTROMETER USING A PDP-8/I COMPUTER
S.E. Shaw 17

A PDP-8/I COMPUTER AS A HIGH SPEED COUNTER/TIMER
S.E. Shaw 21

A COMPUTER-INTEGRATED SYSTEM FOR CONTROLLING FRACTURE TESTS ON BRITTLE MATERIALS
E.T. Brown 25

SMALL COMPUTER MONITORING AND CONTROL TECHNIQUES FOR THE ON-LINE CONTROL OF NUCLEAR POWER PLANT
L.G. Kemeny 31

DATA ACQUISITION

REAL TIME COMPUTER TERMINALS
K.R. Rosolen 37

USE OF A VIDEO STORAGE IN CONJUNCTION WITH AN ALPHANUMERIC DISPLAY
I.D.G. Macleod 41

COMPUTER-AIDED DIGITIZATION OF SEISMIC TRACES
J.H. Goncz 45

AERIAL SURVEY - PRECISION DISTANCE MEASURING SYSTEM
M.J. White and A. Hidas 47

COMPUTER-BASED INSTRUMENTATION SYSTEM FOR A CHEMICAL RESEARCH LABORATORY
W.T. Denholm 51

AUTOMATION OF ELECTRON AND ION SWARM MEASUREMENTS
D.K. Gibson 55

NEUTRON PHYSICS DATA COLLECTION HARDWARE - THE PDP-22
M.D. Scott 59

NEUTRON PHYSICS DATA COLLECTION SOFTWARE
R.J. Cawley 61

FOCAL

AN ON-LINE CONVERSATIONAL HYBRID CONTROL COMMAND LANGUAGE FOR A PDP-8/AD-80 HYBRID SYSTEM
F. Lewin 65

A SMALL SCALE MULTI-TERMINAL COMPUTER SYSTEM
H.R. Kinns and I.R. Johns 69

X-RAY CRYSTAL DIFFRACTOMETER CONTROL USING FOCAL-11
R.R. Lamacraft and E.W. Radoslovich 75

AN EXTENDED VERSION OF FOCAL FOR MULTI-USER DATA LOGGING AND CONTROL
C.H. Weeks 79

COMPUTER COMMUNICATIONS

THE PDP-11 AND CSIRONET
T.S. Holden 83

COMMUNICATIONS AND DIGITAL IN AUSTRALIA
P.L. Bennett 85

SYSTEM SOFTWARE

USING THE PDP-8/E AS A NETWORK ANALYZER
E. Hobson 89

AN ARCHIVE SYSTEM FOR THE PDP-10
T.H. Kerridge 93

SNARK - A DATA STORAGE AND RETRIEVAL PROGRAM FOR THE PDP-10
D.M. Ryan and G.McL. Smith 97

A GENERAL PURPOSE PDP-8 TIME-SHARING SYSTEM
E.P.A. Osborn and G.M. Adam 103

A REAL-TIME LOTTERY SYSTEM FOR THE SUN - AN AFTERNOON TABLOID NEWSPAPER
J.O. Wightman 109

A PDP-11 SIMULATOR WITH COMPLETE I/O CAPABILITY
G.W. Cox 113